

# Railway Age

NOVEMBER 2, 1940

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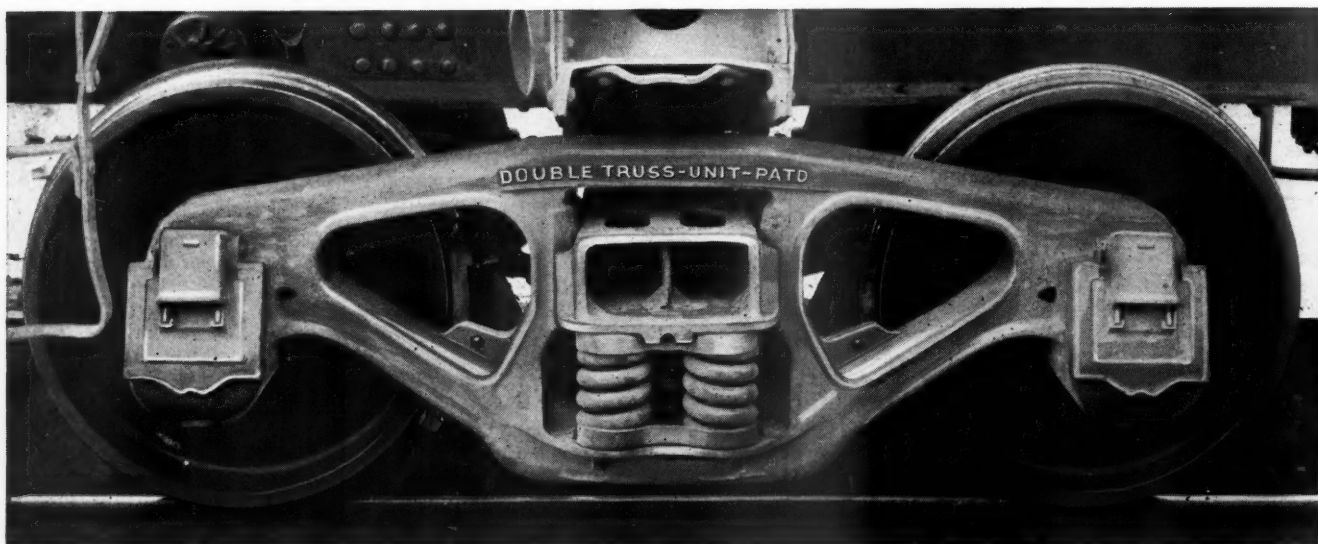
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# Freedom Has Won a Victory Regardless of Election Outcome

The National political election campaign now drawing toward its close has been one of the most hotly contested and important in history. The various polls and forecasts preclude confidently predicting its result. But whether Roosevelt or Willkie is elected it is now plain, first, that the real victory will be won by opponents of the New Deal, and, second, that the contest now under way will prove to be not the termination, but merely one important battle, in a long war of which it is a part.

Throughout the world two great issues are being fought over between nations, and also within nations. One of these is that of stateism versus liberty—whether the power of government shall be made and kept so great as largely or completely to suppress all individual, political and economic freedom and enterprise. The other is whether the power of government shall be used to take from those who have for the pretended benefit of those who have not—from the “have” nations for the supposed benefit of the “have not” nations; from the “have” classes for the supposed benefit of the “have not” classes.

In the political campaign in this country now almost ended it has been perfectly easy to identify those believing in the philosophy of totalitarianism and in the use of governmental power, not to increase, but to redistribute wealth and income. In consequence, the friends of political and economic freedom have really taken alarm and started organized activities independent of any partisan organization as they never did before. This virtually extemporized organization of the non-political opponents of totalitarianism and socialism during the closing weeks of the campaign has been very much the most significant feature of it, and, we are confident, will prove in the long run to have been more important than the result of the election, whatever it may be.

That is to say, the election on November 5 will be merely a battle in the war between the all-powerful-state and free people; and even if it is lost by the defenders of freedom—which we do not expect—that will not mean that the war is lost. If the British had won the battle of Flanders they would still have had much fighting ahead of them. As a matter of fact, they were defeated in the Battle of Flanders; but they have not thereby lost the war. Instead, the heroism and resourcefulness with which they carried out their retreat has given a new determination to carry on and a new confidence in ultimate victory.

This brief Presidential campaign should give the contenders for economic freedom the same faith in themselves and their cause and the same resolve to keep up the struggle that the British derived from their experience in the Flanders campaign; and we believe it will. The retreat from Flanders was not carried out so successfully because of careful planning by an all-seeing general staff. Instead, it succeeded because countless thousands of individuals without any direction from anybody sought out opportunities to assist the common cause, and proceeded to act upon these opportunities on their own initiative. Similarly, in the present Presidential campaign, thousands of Americans in every walk of life have not only organized themselves into committees but constituted themselves committees-of-one to expound the free-enterprise way of life.

One railway supply salesman of our acquaintance, in addition to talking to hundreds of people as a missionary for the continuation of the American tradition of economic liberty, has spent much more money than he could afford for the distribution of printed matter. From the number of orders *Railway Age* has received from individuals for small quantities of reprints of its editorials discussing the issues in this campaign we know that there are many railroad men who are not trusting the political machines to preserve their freedom for them, but have gone campaigning on their own account. Another man known to us has put up money from his own pocket, and from those of his friends, to provide a local radio program which he himself prepared. Such instances could be multiplied by the thousands throughout America, if anyone had the time to seek them out.

### Unbossed Individuals Are America's Hope

When so many self-starting individuals give their time and their money and their utmost ability to a cause—without thought of selfish reward—it requires extraordinary pessimism to believe that the campaign for the preservation of a free economy in America is doomed, even if the present Presidential election should be lost to what Westbrook Pegler well calls the “Social-Democratic” party—that is, the socialists who have captured the Democratic party. The friends of economic freedom have just begun to fight; have just learned, in



fact, that it is necessary to fight and how to fight. It will take a lot of "liquidating" by the Socialist-Democratic faction to exterminate these determined warriors for a free America, even if the Socialist-Democrats win the November 5 election.

But while loss of the election would not signalize the defeat of free enterprise unless its friends should quit fighting, neither would winning the election assure the victory of free enterprise. However the election turns out, there are bound to be many millions of Americans who supported the losing candidate—and those millions will remain as an obstacle to the complete victory of the economic philosophy of the winning candidate. Win or lose the election, therefore, the fighters for free enterprise cannot lay down their friendly weapons of exhortation and exposition. They must continue to do battle for freedom until the cause ultimately triumphs—as it will if the battle is continued.

Until a few weeks ago, few Americans knew the real underlying issue of this campaign, that is, whether the business of getting a living is to be a responsibility of the citizens themselves or whether we are to drift into a condition where the citizens are likely to become the wards and the slaves of the all-powerful-state. Probably there are relatively few who appreciate or understand that issue even yet, despite Mr. Willkie's man-killing efforts to promote understanding of it—an effort in which he has been ably seconded by thousands of volunteer assistants. Still, there are hundreds of thousands of Americans—maybe even millions—who do have some comprehension of this issue now who did not have any notion whatever of it a few weeks ago. Nevertheless, it is doubtful whether more than a small minority of Americans who go to the polls on election day will fully realize how and why their vote will either aid or halt the encroachment of the all-powerful-state on freedom, any more than the long-suffering Germans understood what was at stake when back in 1932 they elected an effective radio orator as the leader of their state. Known discomforts are always more comprehensible than those which merely threaten. Americans have no experience with slavery to the state—hence the difficulty of bringing them to an understanding of its evils, while the memories of the suffering which came to them immediately following 1929 is a vivid recollection. The 1929 debacle was really a joint job, engineered by dumb Big Business and Big Government acting in cahoots—but Big Government turned state's evidence, and Big Business got all the blame in the popular mind.

### No Return to '29

The great difficulty in effective popular education on the issue of the all-powerful-state versus free enterprise is that of disassociating in the people's minds true private enterprise from the stupid, tariff-protected coalition of Big Business and government which characterized this country immediately before the advent of the New Deal. A large part of Mr. Roosevelt's support comes from people who, while they may not care

particularly for the New Deal, have been unable to comprehend that free enterprise as exemplified by Mr. Willkie is as different from the 1929 type of Big Business as it is from the New Deal itself. These doubters do not realize the significance of the fact that Mr. Willkie himself supported the Democratic platform of 1932, and voted for its candidates in that year. Genuine free enterprise is not the right of Big Business to practice unregulated monopoly. It is not compatible with tariff walls erected for the selfish aggrandizement of local interests. It does not contemplate the government embarking in huge and wasteful public expenditures, largely for the glory and honor of the local chamber of commerce. Instead, it means that the government shall neither help nor hinder one group of citizens—enabling it unjustly to prey upon the rest of society, or to hold it helpless as the prey for others.

From Mr. Willkie's addresses and his writings long before he even became a candidate for the Presidency any inquirer will learn that the above statements are a fair reflection of his economic and social philosophy. It is the only attitude toward these questions which can be genuinely called that of free enterprise. And it is only such a concept of free enterprise which has any hope of winning an eventual victory over the all-powerful-state. This true doctrine of free enterprise has been more consistently championed by old-line Democrats (of whom Carter Glass is perhaps the most outstanding living example) than by any other political party or faction. It was only when the New Deal had thoroughly dog-housed and purged these true Democrats that Wendell Willkie turned Republican.

### No Let-Up in Task Undertaken

Well, this campaign has demonstrated that free enterprise is not quite so spineless and decadent as the lady columnist thought. It has brought out thousands of free-lance defenders of private enterprise, who a few weeks ago were inarticulate and ineffective, but who now have the confidence which only experience on the firing line can give. There are hundreds of thousands, and maybe millions, who have now begun to grasp what the struggle between free enterprise and the all-powerful-state means to them. But there are still many tens of millions who do not comprehend this issue. The harvest thus is large, but the skilled harvesters now are many. What they need to do is to avoid either overconfidence or dismay at the outcome of this election, but to pursue through the months and the years which lie ahead their attack on ignorance, which is the only enemy. The *Railway Age* did not have to enlist this year in the war against the New Deal and for free private enterprise. It has the satisfaction now of being able to recall and show that it editorially called attention to the beginning of recovery as early as the middle of September, 1932; that, if not the first, as it believes it was, it was at least one of the first publications to begin, even before they were passed, to oppose some of the principal measures of the New Deal upon the ground that they



would retard or prevent recovery; and that it now has a more than seven years' unbroken record of criticising and opposing the principal policies of the New Deal upon the ground that they would produce the very effects that they have, and of consistently advocating the policies for promoting recovery that have been advocated by Mr. Willkie throughout the present political campaign. In confirmation of these statements we publish elsewhere in this issue an article entitled "An Eight Years' Discussion of Business and Business Problems" consisting of excerpts from editorials that appeared in our columns from September 17, 1932, to October 26, 1940.

We are glad to see the end of a political campaign in which the goals pursued by the opposing candidates

were so far apart that we had no choice save to support one nominee and oppose the other. If the educational effort in behalf of private enterprise, which has now found its speaking voice, is persisted in, perhaps the time will not come again when a business paper has to engage in political discussion because politics has become the principal influence affecting business. But we believe that anybody who should anticipate that the struggle over the issues of stateism versus liberty and of redistribution versus production of wealth and income would be ended by the election next week, regardless of its result, would be much too optimistic; and as long as these continue to be the principal issues before the American people, and the press in this country continues free, we shall continue to discuss them.

## Are Present Rate Progressions Sound?

In this space two weeks ago we printed a communication from a rate and traffic specialist who confessed the sins of his calling (concern over the rate structure as an end in itself, instead of a device to put traffic on the rails) and presented a table contrasting rail and truck cost progression with class rate progression to illustrate an incongruity which specialists tolerate, but which, he thought, the layman's common sense would condemn. But one of the country's leading transportation authorities has given us the friendly criticism that the incongruities in that table, referred to by the specialist, were not immediately evident to him. So the traffic and rate specialist proffers this further comment. (Reference to *Railway Age* of October 19, page 541, will make this easier to follow):

"When the accomplished Mr. ——— finds it difficult to understand a rate situation as portrayed by a traffic man who is *trying to make himself clear*—is it any wonder that most laymen do not comprehend traffic situations of more complexity, which traffic men have not even *tried* to clarify for the lay intelligence? Well, here goes for another effort—

"Freight rates are roughly based upon a charge for terminal handling at origin and destination, stated in cents per 100 lb., plus a charge for transporting between terminals, known as a line-haul charge, which is graduated according to mileage, and is commonly referred to by freight rate experts as the 'progression' of the scale.

"L. c. l. freight is divided for shipment into four major classes based, in large measure, upon the monopoly practice of charging, according to the judgment of the price-maker, 'what the traffic will bear.' The separation into classes is usually not made according to the 'transportation characteristics' of the commodity (i. e., bulk in ratio to weight, its likelihood to loss and damage, etc.), with the result that commodities with the same 'transportation characteristics' (which means approximately the same costs of handling) are classified anywhere from the highest to the lowest class. The line-haul charge is based upon the not-entirely-true theory that line-haul cost per mile decreases as mileage increases.

"In addition, it has been the practice to assess

l. c. l. traffic varying proportions of overhead costs in different sections of the country. If the terminal handlings and transfers enroute are included in the line-haul costs, it is doubtful that railroad cost per mile decreases as mileage increases, and there is much to indicate that truck costs per mile increase appreciably.

"All of these pricing factors have combined to produce a maximum freight rate of 29 cents per 100 lb. for the first 100 miles in the Eastern District, with the rate tapering down for longer distances to a charge as low as 6 cents per 100 lb. for the last 100 miles of a 1000-mile journey. Similar charges in the Southwest vary from 50 cents per 100 lb. down to 10 cents. The cost of trucking in the Southwest is lower than the East and the railroad cost is but slightly higher than in the East. The discrepancy between railroad rates in the East and Southwest means that truck competition is more severe in the latter territory.

"A large part of the carload shipments of finished articles are rated fifth class. The charge on this class ranges from 19 cents per 100 lb. for the first 100 miles in the Southwest to 4 cents for the last 100 miles of a 1000-mile journey in the East.

"The minimum line-haul cost of moving a 20,000-lb. payload by truck is approximately 8 cents per hundred lb. for each 100 miles and is fairly constant, except the cost is higher in the congested areas of the East and there is much to indicate the cost is higher on longer hauls throughout the country. Rail costs are appreciably lower than trucks'.

"Railroad rates appear to be artificially high, with reference to their costs, for the shorter hauls; and arbitrarily low for the longer hauls. Such rates drive traffic to the trucks for the shorter hauls, where truck competition exists—while they artificially favor long hauls, where truck competition is less important or even entirely absent. With this set-up for railroad prices, is it any wonder that trucks have been able to divert from the railroads a large proportion of their most remunerative traffic?

"Is there any way for the railroads to recover the vast amount of traffic they have lost to the trucks except by recasting their rate structure to reflect their cost advantage, wherever they have such advantage?"

# Locomotive and Train Operation Discussed by Road Supervisors

Road operation of Diesels, steam locomotive firing, locomotive and passenger-car brakes, and fuel conservation principal subjects of R. F. & T. E. A. program

**F**OLLOWING an open session at which it joined with three other associations of mechanical supervisors, the Railway Fuel and Traveling Engineers' Association took up a program of reports and papers dealing with the mechanical problems of locomotive operation, train handling with modern freight and passenger brakes, and fuel conservation. The meeting was opened by G. M. Boh, district road foreman of engines, Erie, president of the association, and at other sessions was addressed by D. S. Ellis, chief mechanical officer, C. & O., Cleveland, Ohio; T. O. Weeks, chief dispatcher-division trainmaster, Missouri Pacific, Little Rock, Ark.; John M. Hall, director, Bureau of Locomotive Inspection, Interstate Commerce Commission; and Roy V. Wright, managing editor, *Railway Age*.

Mr. Hall, in an informal address, said that there was no better team than the traveling engineer, the engine-house foreman, and the master mechanic for keeping locomotives in excellent operating condition. He referred to the tremendous improvement in the number of accidents and casualties resulting from locomotive failures since the boiler- and, later, the locomotive-inspection laws have been in force and expressed his appreciation for the co-operation which railroad men had given to the Bureau.

An abstract of Mr. Weeks' address and a number of the reports and papers follow. Reports not included here were presented on the following subjects: Stationary Boiler Plants, E. G. Sanders, fuel conservation engineer, A. T. & S. F., chairman; Locomotive Firing Practice—Oil, Roy W. Hunt, fuel supervisor, A. T. & S. F., chairman; Locomotive Firing Practice—Coal, W. C. Shove, general road foreman of engines, N. Y. N. H. & H., chairman, and Locomotive Economy Devices, A. G. Hoppe, assistant mechanical engineer, C. M. St. P. & P., chairman. A paper was also presented by W. F. Collins, engineer of tests, N. Y. C., on standing tests of locomotive boiler performance conducted at Selkirk, N. Y. This paper will be the subject of an article in a subsequent issue.

## An Evening of Motion Pictures

On Thursday evening, October 24, a program of moving pictures was shown. Colored movies were shown of the action of the draft on the fuel bed in a locomotive firebox. This picture, developed cooperatively by the New York Central and the Standard Stoker Company, Inc., was taken through 6-in. openings at various points around the firebox and showed both the action with the HT and the FD type stokers at several firing rates.

An Oxyacetylene Association film showed the use of the Oxygraph cutting machine. An entertaining colored movie of the Pittsburgh Coal Company followed

through the complete process of bituminous coal production from the mine to the railroad car.

## The New Officers

A. A. Raymond, superintendent fuel and locomotive performance, N. Y. C., Buffalo, N. Y., was elected president for the year 1940-1941. The three vice-presidents, elected for a term of one year, are J. A. Burke, supervisor of air brakes, A. T. & S. F., Topeka, Kan.; L. E. Dix, fuel supervisor, T. & P., Dallas, Tex., and W. C. Shove, general road foreman of engines, N. Y. N. H. & H., New Haven, Conn.

Six members of the Executive Committee were elected. To serve for a two-year term are four: G. E. Anderson, general fuel supervisor, Grt. Nor., St. Paul, Minn.; S. A. Dickson, fuel supervisor, Alton, Springfield, Ill.; H. A. Mallette, road foreman equipment, St. L.-S. F., Springfield, Mo., and W. D. Quarles, general mechanical instructor, A. C. L., Rocky Mount, N. C. Those elected for one year are E. E. Holmquist, master mechanic, C. & N. W., Chicago, and W. J. Porter, fuel conservation engineer, L. & N., Nashville, Tenn.

## What a Chief Dispatcher Thinks of Fuel Economy

In an address dealing with fuel economy from his viewpoint, T. O. Weeks, chief dispatcher-division trainmaster, Missouri Pacific, Little Rock, Ark., made a strong plea for a cooperative effort on the part of all persons having to do with train operation for the elimination of bad operating practices and for conserving the enthusiasm and will of all to do the best possible job of which they are capable.

"In discussing what we now know to have been a wanton disregard in past years for waste of fuel," Mr. Weeks said in his introduction, "bear in mind that what I have to say is in no way intended as a reflection on any group, nor as in defense of any group. On the contrary, that disregard was chargeable to all elements having to do with the operation of railroads. Fortunately, we did eventually realize that fact—perhaps begrudgingly at first, but nevertheless with a growing realization that there did exist an unwarranted waste of fuel. At last we set about determinedly to locate and eliminate the causes, with astonishing results.

"Gratifying as those results have been, the fact that with each passing year we are able further to reduce fuel consumption is sufficient proof that while waste is not now quite so apparent, it does still exist.

"Too often supervisors through their acts, unintentionally of course, cause fuel waste, and unless we look back over our daily work in calm reflection, we may overlook many opportunities for eliminating that waste. It is of the utmost importance that we not only check up on the performance of those whom it is our duty to supervise, but that we also check up on ourselves with the utmost thoroughness of which we are capable. If we do not take the time to look back over our work and pick out the flaws, so that we may avoid them in the future, we are



sure to overlook some opportunity for improvement in our own work. We learn principally by the experience we get in actually doing the job, and we cannot take full advantage of that experience unless we take the time to separate the chaff from the grain."

### Opportunities for Reducing Fuel Waste

Mr. Weeks here set forth a number of specific points which he considered as offering opportunities for effecting a decrease in the waste of fuel. Mechanical forces, he said, should not send an engine out unless it is in proper condition to perform efficiently. Only fuel of the correct standard should be supplied. Tenders should not be overloaded with coal so that some of it rolls off and falls to the ground. Coming to the responsibilities of the division trainmaster-chief dispatcher, he listed as, first, keeping the mechanical forces informed what engines will be required and when they will be needed, and second, that the chief dispatchers and roadmasters should maintain the closest degree of cooperation so that trains will not be ordered ahead of the time when they may reasonably be expected to move. Better planning at this point, he said, will eliminate a large amount of fuel waste resulting from trains not being ready to move when ordered.

"This thing of trains not being ready when ordered," said Mr. Weeks, "creates one of the most aggravating situations which we have to deal with. Fuel is not only wasted as a result of that engine being fired up far in advance of the time it is actually required, but there is a still greater loss which it is impossible to gage. Suppose we say the crew is called for 2:00 a. m. They show up at the yard, all pepped up and rarin' to go; ready to make a good trip, and because the train is not ready they are delayed an hour or perhaps more before getting started. The psychological effect of that delay changes the whole picture. The crew feels perhaps that nobody is taking very much interest in moving the train; there is a let-down in the mental attitude of the crew that is bound to have an adverse effect on their performance on the entire trip. That is only human."

Work to be done by trains along the line should be planned by the dispatchers and the crews informed sufficiently in advance so that they, in turn, may plan their work. Switching, he said, should be done in the terminal and not on the road. Trains should be made up so that set-outs are in station order at the head end to eliminate unnecessary switching moves.

Through passenger trains should not be required to make local stops. To pick up a passenger with a \$1.25 ticket with a stop costing \$5 is not economy, he said. For the same reason through-freight trains should handle only through cars.

"The stopping of through passenger or freight trains between terminal points to take on fuel and water," said Mr. Weeks, "is one source of waste that can and should be eliminated. I have advocated this idea for the past 20 years and I shall continue to do so in the hope that eventually it will be eliminated. I was asked how I propose to eliminate these stops for fuel and water. I would say by increasing the fuel and water capacity on our engines. Why not use the entire tender for fuel and provide a tank only for water, with sufficient capacity to eliminate the necessity of making intermediate stops?"

"The Missouri Pacific has gone a long way toward that goal and I am sure will continue to work toward that end. A great many of our engines have been provided with increased capacity for fuel and water far beyond anything expected a few years ago. Auxiliary water cars are now in service on the majority of our through freight trains and by their use we have in many cases been able to eliminate as many as three water stops on a through freight run. You know what it means when the engine crew can choose the engine point at which they will take water instead of arbitrarily having to take water at the next tank, as is possible with the auxiliary water car in service. Usually such stops can be made at points that will enable the train to get out of congestions or perhaps enable it to make double track for trains which it might otherwise have to take siding to meet or allow to pass on single track. I know of nothing that has contributed so much toward improving train operation and consequent fuel saving as has the auxiliary water car."

### The Kind of Facilities That Help

Mr. Weeks advocated the location of fuel and water facilities so that locomotives can be served on the main track wherever

possible; detaching the locomotive from the train for a trip into the yard results in unforeseen delays. The installation of centralized traffic control had done much to eliminate bottlenecks on the Missouri Pacific, he said, and such installations are being extended.

A number of other methods which exert a favorable influence on fuel economy were listed by Mr. Weeks. He advocated increases in the mileages both of through and local runs, pointing out that these tend to decrease the number of hours on the road by eliminating or lessening the opportunities for overtime. Slow orders necessary in daylight working hours should not be allowed to remain in effect during the night as is frequently the case. The starting of tonnage trains when they will encounter the least traffic interference he cited as another opportunity where the dispatcher and yardmaster can cooperate in the interest of fuel economy.

"Train dispatchers," he said, "are in a position of the greatest importance as concerns fuel economy. Upon the effectiveness of their efforts depends in a large degree the entire program of efficient operation which the various departments of our railroads are striving to accomplish. Each and every employee in the operating department particularly looks to them for guidance and assistance in his efforts to accomplish that which is expected of him, and this is likewise true in some degree of employees in associated departments. Therefore, the train dispatcher who is appreciative of the great responsibility resting in his hands and who takes an active interest in assisting all of the elements associated with them in bringing about a successful operation can accomplish immeasurable good. Likewise, he is entitled to full cooperation from each and every one of his associates and he certainly cannot be expected to be successful in assisting others to perform their work efficiently unless they render him that same assistance."

### High Standards for Supervisors

He spoke of the important part traveling engineers and fuel supervisors could play in the education of engine crews, not only in matters of mechanical operation, but in related matters of operating practice. "I have in mind at this time two particular items," he said.

"First, as a train dispatcher it was my practice to talk with engineers or firemen, or both if possible, prior to start of their trip, and give them an outline as to what interference they were going to encounter, what I expected to be able to do, and asking for their advice as to what they thought they would be able to do under certain circumstances; also asking them to advise me where they intended stopping for water, etc., as early as possible so that we might work toward the same end. Most enginemen I found quick to respond to this kind of cooperation, and I know that we both were able to do a better job. . . .

"Second, our railroads—at least a great many of them—have spent considerable sums of money to provide booth telephones at sidings, in most cases at both ends of sidings, in order that crews might be able to communicate with the train dispatcher, informing him of unusual occurrences that delayed the train. Oftentimes, just the information that a delay has occurred and an approximate time that the train could be expected to move would prevent serious delays to other trains, which naturally would mean fuel saved. Too much of the time lost on the road is chargeable to failure of crews to take advantage of the telephones.

"If you in your contacts with these men could bring to them a full appreciation of their responsibility in these matters, it would have a very beneficial effect."

The task of eliminating fuel waste, he said, comes down to not being satisfied so long as we know that waste exists, constantly searching for its causes and then finding means for eliminating them.

"If we could only maintain our boyhood ideals," said Mr. Weeks in conclusion, "the enthusiasm that was ours the first day that we started out on our own to make a place for ourselves in the world; if we could supplement the knowledge we have gained through years of experience and hard knocks with those ideals and that enthusiasm, we might be inspired to pursue our activities with such zeal and determination that no obstacle could deter our progress."

"Improvements in society come about through the efforts of



the idealistic realist who has the courage and audacity to challenge present usage with new ideas.

"It is true, and sadly so, that too often his efforts fail; however, for the most part, good is the result. Therefore, to progress we must experiment and for my part I had rather go down in defeat trying out something new that offers possibilities of improvement than to attain an easy success following a system of procedure that may have been entirely adequate yesterday, but is wholly inapplicable to the conditions of today."

## Address of Mr. Ellis

D. C. Ellis, chief mechanical officer, C. & O., told of attending meetings of this association in the past and commented particularly on the improvement in performance reflected in the report of Locomotive Utilization. All railroads cannot have long mileage runs, he said, but other means have been found by which the monthly locomotive mileage can be built up. Even in the case of steam switch engines coaling, cleaning the fire, filling the tank, and lubricating is being done during the 20-min. period of the crew. He congratulated the association on the support it had given to good maintenance of locomotives. The early efficiency experts, he said, were considered a necessary evil. Even they, however, served an important purpose and, today, the members of this association have to be efficiency experts in their own field. We are the beneficiaries of many improvements in rolling stock, right-of-way, signals, and other facilities. A continuance of progress along these lines rests in the hands of present railroad men, he said. In this connection he suggested that when considering changes or improvements the history of similar developments be first completely reviewed in order that a clear picture of the problems still needing attention may be attained.

## How Much Locomotive Fuel Can Be Saved

J. G. Crawford, fuel engineer, C. B. & Q., in a brief paper presented the results of estimates on how much locomotive fuel could be saved which were made by superintendents and master mechanics of the C. B. & Q. The information, broken down by causes for loss, is presented in the table.

**The Percentages of Locomotive Fuel That Can Be Saved**

(Estimates by C. B. & Q. Superintendents and Master Mechanics)

Classification of fuel losses and fuel wastes:	Superintendents			Master mechanics			Superintendents and master mechanics avg. per cent
	Range, per cent		Avg. per cent	Range, per cent		Avg. per cent	
	From	To		From	To		
Purchase, distribution and inspection .....	.00	8.00	1.87	.00	10.00	2.60	2.24
Handling of coal at coaling stations ....	.10	2.00	.43	.00	2.00	.60	.52
Handling of fuel oil at oiling stations ...	.00	.20	.05	.10	.20	.03	.04
Locomotive design ...	.00	14.00	4.02	.10	14.00	3.15	3.58
Locomotive maintenance ..	.00	3.00	.64	.00	1.50	.80	.72
Locomotive assignment..	.00	1.00	.19	.00	1.00	.19	.19
Locomotive operation..	.00	5.00	1.48	.00	3.40	1.41	1.45
Terminal locomotive handling .....	.00	1.00	.21	.00	.90	.36	.28
Time tables and dispatching .....	.00	10.00	1.71	.00	1.50	.45	1.08
Yard work .....	.00	.50	.22	.00	1.10	.23	.22
Road work .....	.00	5.00	1.26	.00	1.00	.16	.71
Passenger train heating and lighting ....	.00	1.00	.17	.00	1.00	.23	.20
Lubrication of cars ....	.00	5.00	.88	.00	3.00	.31	.60
Company material ....	.00	.40	.07	.00	.40	.07	.07
Repair tracks .....	.00	.10	.04	.00	.40	.08	.06
Signals and interlocking ..	.00	.50	.10	.00	1.00	.14	.12
Equipment .....	.00	5.00	.86	.00	.50	.18	.52
Loading of equipment..	.00	.50	.08	.00	.25	.04	.06
Track .....	.00	5.00	.98	.00	1.00	.12	.55
Coal and water stations ..	.00	1.00	.18	.00	1.00	.25	.21
Total .....	..	..	14.40	..	..	11.84	12.62

"These investigations," said Mr. Crawford, "again bring out the extensiveness of the fuel problem and show where intensive effort should be applied to reduce fuel costs. Our individual

members can, solely by their own efforts, accomplish little, but must obtain the support of other departments if minimum locomotive fuel consumption is to be reached and maintained.

"Is it too much to ask that all officers frequently consider operating problems in terms of fuel?"

## Utilization of Locomotives

The report is made up of three parts. The first deals with the average daily mileage of locomotives on ten large roads. The second is a study of the highest average mileages made by groups of five or more locomotives reported by 35 railways. The third is a study of the cost of keeping surplus locomotives in service.

### Average Mileages on Ten Large Roads

For the first six months of 1940 the average miles per passenger locomotive per day on ten large roads ranged from a high of 285.8 down to 198.8. A year ago the range was from 269.7 down to 205.1. Four roads showed decreases. The average for the United States is 189.1—an increase from 183.4 for the first half of 1939. All regions, except the Pocahontas, showed improvements.

In freight service the average daily mileages on the ten roads for the first six months of 1940 ranged from 129.3 down to 96.1 as compared with 124.1 to 95.2 for the corresponding period a year ago. The average for the United States was 105.7, as compared with 102.1 last year. All regions showed improvements.

In switching service the averages range from 79.8 down to 63.6; last year the highest average was 77.4 and the lowest 60. The average for the United States was 70.2 this year and 66.6 last year. All regions showed improvements.

### Highest Mileages of Groups of Locomotives

To learn what the most active locomotives were doing the committee asked 35 of the principal railroads of the United States to pick out a group of 10 locomotives, or five locomotives if necessary, and, for the month of May, 1940, give the average miles of this particular group, separating passenger, freight and switch service.

The roads having groups of passenger locomotives averaging 10,000 miles or more a month, of freight locomotives averaging 7,000 miles a month or more, and of switching locomotives averaging 3,500 miles a month or more were compiled in tables for study.

The committee analyzed the data in these tables for correlation between the miles per month and several factors. There is apparently no relation between the water capacity of tenders and the extent to which steam passenger and switching locomotives are utilized. While the correlation is not sharp, there is some indication that the water capacity of the tenders on freight locomotives affects the miles per month. The committee found little indication that the length of runs is a major factor in the monthly mileage performance. Many roads are obtaining high mileages with turn-around runs.

In passenger service the group of Diesel-electric locomotives making the highest miles per month averaged 24,467 miles, while the highest mileage group of steam locomotives averaged 17,363 miles per month, making 41 per cent more miles for the best group of Diesel-electric locomotives than for the best group of steam locomotives. In switching service the best group of coal-fired steam locomotives averaged 3,849 miles per month; the best group of oil-fired steam switching locomotives, 4,000 miles per month, and the best group of Diesel-electric switching locomotives, 4,259 miles per month.

The committee's study indicates that the mileage obtainable from switching locomotives is dependent on how long it is necessary to hold them for refueling, cleaning ashpan, and conditioning of the locomotive.

### Cost of Surplus Locomotives

The report closed with an estimate of the cost of maintaining a locomotive in service when it could be stored and the utilization of the remaining locomotives increased. On the assumption

of a pool of 40 locomotives, two of which could be stored, it was estimated that each of these locomotives would cost \$6.10 a day for every day it remained in service when not necessary. This includes \$4.30 a day as the cost of monthly, quarterly and annual inspections, which accrue on a calendar day basis and for a full year aggregate an expense of \$1,575 per locomotive. The remainder is a cost for fuel which is estimated to amount to at least \$1.80 per day.

The report is signed by A. A. Raymond (chairman), superintendent fuel and locomotive performance, N. Y. C., Buffalo, N. Y.; H. W. Bates, assistant master mechanic, C. M. St. P. & P.; E. J. Cyr, division master mechanic, C. B. & Q., Chicago; E. W. Erisman, road foreman engines, Wabash, Decatur, Ill.; S. L. Forney, road foreman of engines, M-K-T, Parsons, Kan.; O. R. Pendy, general enginehouse foreman, N. Y. C. & St. L.; W. E. Sample, assistant to chief motive power and equipment, B. & O., Baltimore, Md., and E. G. Sanders, fuel conservation engineer, A. T. & S. F., Topeka, Kan.

## Turbine and Condensing Locomotives

This paper reviews the evolution of steam power which began with the reciprocating engine and ultimately developed in the form of the steam turbine. It then calls attention to the fact that practically all internal-combustion power generating units have been of the single-acting reciprocating type up to the present time and expressed the opinion that eventually the internal-combustion-type power generating units must and will pass through the same cycle of development as the steam power generating units; in other words, from the reciprocating piston type to the rotary turbine type.

Last year this committee, with the assistance of the Allis-Chalmers Manufacturing Company, and other manufacturers as listed at the end of the report, presented to this Association a report covering a preliminary outline and design for a 500 h.p. combustion-turbine locomotive.

The Allis-Chalmers Manufacturing Company is continuing its research and development of the combustion turbine and has built and is continuing to build more of them not only for the oil refining industry but also for other purposes.

Research has developed the fact that there are high temperature alloys which can be used for the combustion turbine blading which will permit use of temperatures considerably higher than 1,000 deg. F. now used for the combustion gas to the turbine. This will permit the economical use of higher pressures from the axial air compressor to the turbine and will materially increase the overall efficiency.

Further than this, there are several other details of design and construction which are being investigated and which it is believed will also improve the efficiency and operation of the combustion turbine, all of which will reduce the size and weight per horsepower. This size and weight reduction will permit a 6,000 hp. plant to be installed in one unit of a locomotive similar in construction to the one proposed in last year's report by this committee, except that instead of using two gas generating units and two 2,500 hp. combustion turbines, it will be possible to use four gas generating units and four 1,500 hp. combustion turbines, two gas generating units being located near each side of the locomotive cab with passageway between them.

With this arrangement, one complete 1,500 hp. gas generating plant and combustion turbine will form an individual power plant for each of the four pairs of driving wheels, each transmission being through hydraulic converter and hydraulic coupling the same as was proposed last year, except that last year each of the two 2,500 hp. plants was proposed to drive two pairs of driving wheels, making 5,000 hp. for each locomotive.

With an individual 1,500 hp. power plant driving each of the four pairs of driving wheels, this power per pair of wheels would be three times as great as can be used on a single Diesel-electric locomotive driving axle because a 500 hp. electric motor is about as large as can be constructed in the space available on the Diesel powered locomotive truck. This makes it necessary to use 12 pairs of driving wheels for 6,000 hp. on the Diesel-electric locomotive, whereas, four pairs are

sufficient for the combustion-turbine locomotive which would be constructed in one unit and one cab instead of three units and three cabs required for the Diesel-electric locomotive, which would weigh about 950,000 lb. compared with about 500,000 lb. for the combustion-turbine locomotive.

The latter type locomotive would use Bunker "C" or No. 6 fuel oil (not distillate) and would use nearly double the amount of fuel used by the Diesel locomotive per horsepower developed, but the cost of the Diesel fuel oil would be double the cost per gallon of the fuel oil required by the combustion-turbine locomotive.

On account of its lighter weight, the combustion-turbine locomotive would pull four 112,500-lb. cars or three 150,000-lb. passenger cars more than the Diesel-electric locomotive, or for handling the same maximum train as the Diesel, the fuel-oil cost would be an estimated 25 per cent less than for the Diesel-electric, and the cost of lubricating oil would be very much less than for the Diesel-electric locomotive.

One great factor in the statements given above, is the use of the mechanical instead of the electric transmission, thus increasing the efficiency and making a considerable saving in space, weight, first cost and operating and maintenance costs, and above all permitting building a 6,000-hp. locomotive in one unit, under one cab.

The report is signed by L. P. MICHAEL, chief mechanical engineer, C. & N. W., Chicago.

## How Much Steam to Locomotive Auxiliaries?

E. E. Chapman, mechanical assistant, A. T. & S. F., Chicago, presented a study of the proportion of steam used by auxiliary devices to the total generated on locomotives under various conditions. He classified the auxiliary steam-using devices into two groups, one consisting of those the steam rates of which are independent of boiler output and, the other those the steam rates of which are proportional to total boiler output.

The first group includes the air pump, steam for lubricators,

Per Cent of Steam to Locomotive Auxiliaries

Operation at per cent capacity..	As per cent of steam generated			As per cent of total heat in fuel		
	25	50	100	25	50	100
OIL-BURNING FREIGHT LOCOMOTIVES						
Steam to auxiliaries, not incl. that used for draft ...	7 to 10	5 to 8	4 to 7	4 to 7	3 to 5	2 to 4
Steam to auxiliaries, incl. that used for draft .....	10 to 13	9 to 12	8 to 10	7 to 9	5 to 7	4 to 6
OIL-BURNING PASSENGER LOCOMOTIVE HANDLING 12 CARS						
Steam to auxiliaries, not incl. that used for draft ...	22 to 26	12 to 16	8 to 11	15 to 18	8 to 10	5 to 6
Steam to auxiliaries, incl. that used for draft .....	25 to 29	16 to 19	12 to 14	17 to 20	11 to 13	7 to 9
COAL-BURNING FREIGHT LOCOMOTIVES						
Steam to auxiliaries, not incl. that used for draft ...	7 to 10	5 to 8	4 to 7	4 to 7	3 to 5	2 to 4
Steam to auxiliaries, incl. that used for draft .....	11 to 14	9 to 12	8 to 11	7 to 9	5 to 7	4 to 6
COAL-BURNING PASSENGER LOCOMOTIVE HANDLING 12 CARS						
Steam to auxiliaries, not incl. that used for draft ...	23 to 27	13 to 17	8 to 10	15 to 18	8 to 10	4 to 6
Steam to auxiliaries, incl. that used for draft .....	26 to 30	17 to 20	12 to 15	17 to 20	10 to 12	6 to 8

the headlight turbo generator, the whistle, steam-heat train line, and axle generator loads. In the other group are included injectors and boiler-feed pumps, blow-off cocks, safety valves, and firing auxiliaries. He also includes a discussion of the



feedwater heater and superheater, the net effects of which are gains in heat rather than losses.

In his paper Mr. Chapman deals with the steam rate of each of these auxiliaries separately and then summarizes their overall effect in a table based on a study of the heat balance of a freight locomotive of 100,000 lb. per hour steam-generating capacity, and of a passenger locomotive of 80,000 lb. per hour steam-generating capacity. The table shows the total auxiliary steam consumption expressed as a per cent of the total steam generated.

### Discussion

Several questions were asked concerning the effect of loss of steam through leaks between passenger cars and what difference air conditioning had effected in the hauling of the train. Answering the latter question, Mr. Chapman pointed out that air-conditioning equipment added as much as 15,000 lb. per car, depending somewhat on the type of equipment installed, and that this added to the power required for hauling the train. To arrive at the total effect the increased traction power, he said, must be added to the steam used to generate the power required to operate the air-conditioning equipment.

## Operating Diesel-Electric Locomotives

BY LEO W. POWELL\*

It is necessary to educate enginemen and firemen in handling and caring for Diesel-electric locomotives while in service. They must have a working knowledge of the operation of the Diesel engine, an electrical generator, control system and traction motors. Very few enginemen have had an opportunity to familiarize themselves with equipment of this nature. Necessary instructions are furnished by the builders of the Diesel locomotives and supplemented by railroad instructions. These instructions provide the opportunity for the enginemen and firemen to acquaint themselves thoroughly with this equipment, and to know the attention required on their part.

### Handling the Throttle on Diesel-Electrics

One of the first and most important things the engineman must learn and remember is the proper handling of the throttle of a Diesel locomotive. There is considerable difference in the action that takes place in opening the throttle valve on a steam locomotive, to allow steam to flow to the valve chamber, and what takes place when the throttle is opened or closed on the Diesel locomotive. On the latter regulation of the speed is accomplished by varying the excitation between four pistons controlled by magnet valves. A combination of nine governor positions is possible, in the range from no fuel to maximum injection. These changes require a certain amount of time, and cannot be hurried.

Opening the throttle too far, while the train is moving slowly, results in a severe load on the mechanical and electrical equipment. If the throttle is opened too quickly, there is the possibility that the governor will not have a chance to adjust itself to the load and speed. The result is, that the overspeed governor is very likely to cut in and stop the engine. Closing the throttle too quickly is likely to result in stuck or broken exhaust valves. It takes a short interval of time for the governor control to readjust itself to each throttle position during which time the heavy rotating and reciprocating parts of the power plant must have a chance to slow down.

This is the reason for the instructions in road service to use at least four seconds in each notch in opening the throttle and at least six seconds in each notch while closing the throttle. The movements to each notch should be made quickly, with no stopping of the throttle between the notches. Diesel switch locomotives do not have notches on the throttle.

Many difficulties can be avoided by adhering to the proper operation of the throttle. By stopping the throttle between notches above Run 3 position, the governor control will have

\*Road Foreman of Engines, Atchison, Topeka & Santa Fe, Argentine, Kan.

the engine all the way from idle to wide-open and back to idle.

Another important matter is the reverse lever. It should never be changed from one direction to another while the locomotive is in motion, except in an emergency, as this will cause locking of the wheels, with the possibility of damage to the gears or the sliding of wheels. Such a condition must be carefully watched and prevented.

### Starting Road Trains

Handling of passenger trains with Diesel locomotives is similar, in some respects, to other forms of power. The starting of trains, however, requires care in handling the throttle in Run 1 and Run 2 positions. Starting lightweight trains is simple for the reason that there is a little or no slack in such trains. With the heavy passenger cars there is more or less slack in the draft rigging, and the throttle should be left in Run 1 position just long enough to take all of the slack in the couplers, then go to Run 2 position. It is characteristic of the Diesel-electric locomotives that the traction motors develop their greatest drawbar starting effort when the locomotive is standing still. If the throttle is left in Run 1 position too long, while starting trains, it will sometimes result in stalling of one or more of the power plants. Care should be exercised in going to Run 2 position, when starting trains consisting of heavy cars. If the slack is not taken out gently, the rear end will get a hard or rough start.

At highway crossings, it is natural for the public using the highways to look for smoke emitted from a locomotive, and in this manner tell if a train is approaching. With the Diesel locomotive there is no smoke and little noise. Consequently there is more hazard, and the engineman should see that the whistle is properly blown. The first blast should be started back far enough to compensate for the speed that is being made, and the last blast completed as the engine is on the crossing.

Speed is a watchword on our railroads today, and it is apparent it will increase. The speed recorder is essential and must be watched. On the Diesel locomotive, owing to the smoothness of riding, speed cannot be judged close enough by looking at the ground when approaching speed restrictions or stops. For that reason, there should be a standard location of station boards, crossing whistle boards, and speed restriction boards as to distance. This distance should be the same on all divisions on all railroads in this country, so that there could be no mistake made by any engineer as to distance required to slow his train down or to make a stop.

Instructions provide that the throttle must be reduced to Run 5 position when the train is to be steadied on a curve. When the speed of train is to be reduced by 15 m.p.h., the throttle must be closed off to Run 1 position.

When the speed is to be reduced to 20 m.p.h. with 201-A type engine and 28 m.p.h. with 567 type engine or a stop is to be made, the throttle should be closed to idle position.

When drifting or passing over railroad crossings, the throttle must be reduced to Run 1 position, which will hold the contactors in parallel position. If the throttle is closed to idle position, it will be necessary to open it to Run 7 position on a 201-A type engine and to Run 8 position on a type 567 engine to get back into parallel position.

If by chance the engineman gets into idle position while drifting or passing over a railroad crossing, do not open the throttle to Run 1 position, with the thought that it should be in Run 1 position over the crossings. This brings the series contactors back in, which is detrimental at high speeds. Leave the throttle in idle position until such time as the crossing is passed over, then open up to Run 7 or 8 positions, according to the type of engine so as to get parallel contactors back in. Then, if Runs 7 or 8 positions are unnecessary to make the schedule time, reduce the throttle to the desired position. Do not fail to observe this feature.

In freight service, with the Diesel-electric locomotive of 5,400 hp. capacity, care should be taken that the brakes are fully released before starting. Caution should also be used in opening the throttle, as it has been proved these locomotives will start whether the train does or not. Trains can be broken in two, unless instructions are adhered to.

On heavy grade when the locomotive is operating in the parallel position, and full power is desired, in order to avoid



stopping of the engines by the overspeed governor during transition from parallel position back to series position (when speed drops back to 19 m.p.h. with 201-A type engine, and 28 m.p.h. with 567 type engine) close throttle quickly to idle position; remain in this position four seconds to allow power switches to drop back to series position. Open the throttle quickly to Run 5 position and then open throttle from Run 5 position to Run 8 position in the usual manner. If Run 8 position picks the speed up and it is desired to negotiate heavy grades with the contactors in series position, it is necessary to reduce the throttle.

### Switching Technique

In yard switching, the Diesel-electric locomotive gives very good service. My observations cover all classes of yard work—heavy lead switching, industry work, and transfer work.

The yardmen and enginemen soon become familiar with the handling of the Diesel switch locomotive. We all know the yardmen working with steam power, switch cars by the exhaust of the engine. The Diesel locomotive changes this, and the yardmen have to watch the cars, however, the proper handling is soon learned.

The yard engineman can save at least 20 per cent in the stopping distance, if the yardmen are out far enough from the side of the cars to be observed, so the engineman can use one hand on the throttle and the other hand on the brake valve. If the engineer is only using one hand to handle first the throttle and then the brake valve, he will move two or three car lengths farther before the cars separate.

Yardmen favor the Diesel locomotive because there is no exhaust steam or smoke blowing down on the leads to interfere with their signals, nor ice forming on the leads in the winter from the injector overflow. The engine-crew's visibility is very good, and this is a very important factor in a busy terminal where a large number of trains, engines, and signals must be observed.

Yardmasters can place the Diesel locomotives on any job. There is no need to think of the wheel arrangement, or the road number when the small or old industry tracks have to be pulled or a car spotted. The Diesel will go any place a freight car will clear. The Diesel locomotive will also make transfers, making it unnecessary for the yardmaster to wait until a certain type locomotive returns from another job to make the delivery. It will go out on a lead and give very good service. The Diesel locomotive is ideal yard power.

Close attention to all routine duties will greatly assist in eliminating trouble and prevent wear. Where two or more units are being used, the helper should patrol one of the units as nearly continuously as possible, in order that the unit will not be left without someone in the engine room. When any foreign sound develops, indicating trouble with an engine, he should immediately take the engine off the line, and make an inspection to locate the trouble before greater damage is done by allowing that engine to operate.

### Discussion

An important factor in training enginemen for Diesel-electric locomotive operation which was commented upon several times in the discussion is to discourage them from making repairs or adjustments. Three other phases of training in which the road foreman plays an important part were set forth as the handling of the controls, encouraging thorough cleaning of the units, and helping the men to cultivate sensitiveness to unusual sounds and judgment in observing and reporting symptoms of disorder.

## Making Screenings Good Locomotive Coal

Coal preparation methods are constantly changing with the increasing use of mechanical burning equipment. The increased use of mechanical loading machinery also necessitates changes in cleaning and other preparation methods. It is acknowledged that coal preparation is directly related to coal combustion and that the combustion efficiency of many coals is dependent in a large

measure upon the efficiency of cleaning, size of coal and the equipment in which it is burned.

In recent years a great deal of experimental work has been done in stationary plants on the various sizes and kinds of coal having different burning characteristics. The result is that many mines are producing a number of secondary sizes from the 2-in. by Zero  $1\frac{1}{2}$ -in. by Zero nut and screenings coal. In some preparation plants it is not unusual to produce five or more secondary sizes from the 2-in. by Zero coal without changing the screen plates. These separations may run almost any fraction of an inch. The demand for a clean fuel on the part of the domestic and semi-industrial stoker coal consumer has increased the production of dedusted and various sizes of pea and nut coal. The increasing market for the smaller sizes of coal is causing a decreased demand for the larger sizes. In fact some preparation plants ship no lump. Most new plants are provided with crushers and many old plants are installing crushers which will crush the entire tonnage to screenings if necessary.

There is an increasing trend towards mechanical cleaning of coal in the middle west and Rocky Mountain regions. The following is an average of several float and sink tests along with the average ash analyses from one district that has several different types of wet washing equipment and these figures are based on good washing results. The sizes included in this check are  $3\frac{1}{2}$  in. by Zero. The size 48 mesh by Zero is discharged as refuse because many analyses show this size to contain an average of only 18 per cent of float substance and 82 per cent of sink substance. Raw coal,  $3\frac{1}{2}$  in. by 48 mesh, averages 16 per cent ash. Clean coal,  $3\frac{1}{2}$  in. by 48 mesh, averages  $6\frac{1}{2}$  per cent ash. Washing results at a specific gravity adjustment of 1.5 shows for clean coal a product of 98.25 per cent float substance and 1.75 per cent sink substance. The final refuse contains 5 per cent float substance and 95 per cent sink substance.

To the railroads as well as to the commercial consumer, mechanical coal cleaning has many advantages. Some of the advantages to the railroads are: More heat units per dollar; fewer cars required to handle locomotive coal; longer potential locomotive runs and, as a result, more miles per locomotive day; better fires, and less delay to cleaning and dumping fires; lower cost of handling locomotives; decreased cost of grate and ash pan maintenance; fewer steam failures due to honey-combing of flue sheets and clinkered fires; the use of commercially less desirable sizes of coal for stoker fired locomotives, such as 2-in. by Zero or 3-in. by Zero, with resultant benefit to the railroads due to a lower cost of handling such coal and of stoker maintenance. The mining companies benefit also by releasing to the commercial market the higher priced lump sizes of coal.

If coal is to meet the bitter competition of fuel oil, gas and electricity produced by water power, the consumer must receive more heat value per dollar from coal than from other fuels and must know that he is getting it. If the steam locomotive is not to go the way of the covered wagon, it must operate as cheaply or more cheaply than other forms of motive power.

The principal limiting factor in the operation of coal burning steam locomotives today is the necessity for frequent fire cleaning. Mechanical cleaning of coal is a progressive step in the right direction. The question that is asked many times, "Why should it be necessary to purchase run of mine or sized coal up to a maximum of 6 in. or 8 in., then pass it through a stoker crusher, finally breaking it down to a maximum of  $2\frac{1}{2}$  in. to 3 in. before it enters the firebox. Why not purchase coal already broken down to the size desired for stoker firing?" There is only one answer to these questions. Raw screenings are dirty. The higher percentage of screenings, the higher the percentage of impurities. In a desperate effort to get clean coal, the railroads must buy lump coal, or at least coal with as small a percentage of screenings as possible, if the coal is not mechanically cleaned. Conversely, the screenings in mechanically cleaned coal is the cleanest part of the mine's finished product.

The higher speeds and more exacting requirements of present day railroad operation make it imperative that cleaner coal be furnished for railroad use, but not necessarily larger sizes of coal. On the contrary, as more stokers are installed in locomotives we may look forward to the time when no locomotive

coal will be purchased in larger than 3-inch maximum sizes. That time will not come however, as long as screenings and dirt are synonymous in the minds of the great majority of purchasing and operating officers of the railroads.

The report is signed by S. A. Dickson (chairman), fuel supervisor, Alton, Springfield, Ill.; G. G. Ritchie, fuel service engineer, C. & O., Richmond, Va.; E. G. Sanders, fuel conservation engineer, A. T. & S. F., Topeka, Kan.; W. L. Shepard, assistant to vice-president, Pittsburgh Coal Company, Pittsburgh, Pa.; W. R. Sugg, superintendent fuel conservation and lubrication, Mo. Pac., St. Louis, Mo., and W. J. Tapp, fuel supervisor, D. & R. G. W., Denver, Colo.

### Discussion

In answer to a question concerning a project for the treatment of coal to control the kind of clinker produced, Mr. Dickson said that research was being conducted on the possibilities of accomplishing this result at several points. He said that in this study clinker was classified as troublesome; that is the kind which seals over and sticks, and trouble-free which is porous and does not stick. The research so far has developed that the sticky, sealing type of clinker usually possesses high density, while the porous, trouble-free type is of low density. He cited two examples, one a clinker with a specific gravity of 1.95 which is not troublesome, and the other, a specific gravity of 4.16 which is troublesome. Changing the specific gravity of the latter type of clinker by adding other materials in the process of preparing coal for the market has been tried, and sand has been found the most practicable. A clinker of 2.4 specific gravity produced by this method has been found satisfactory.

## Methods of Collecting Data for OS Reports

Through the cooperation of the chief accounting officers of 30 Class I railroads, the committee has collected the information as to methods of compiling several detail features of the regular monthly Form OS reports made to the Interstate Commerce Commission. The study covers principally the items that are involved in the final computation of the reported monthly freight fuel performance in pounds of coal (equivalent) per thousand gross ton-miles, including locomotives and tenders.

### Gross Ton-Miles of Cars and Contents—Form OS-A, Item 6

Our questionnaire developed that there are two general methods of compiling the gross ton-mileage of cars and contents:

a—Twenty-two roads use some method of accumulating the gross weights of the individual cars, as shown on waybills or wheel reports. On nearly all reporting roads, some small part of the total ton-mileage is computed for the movement, for shorter or longer distances, of cars that have not been weighed. The methods used by the various roads to determine the gross weights of such unweighed cars were reported as follows: Estimated gross weights; average gross weights for the specific classes of cars, determined by study of scale sheets; estimated net weights from wheel reports plus average tare weights established by study of wheel reports; agent's, yardmaster's or conductor's recorded or estimated net weights plus the stencilled tare weights; stencilled capacity for net weight plus stencilled tare weight.

It would seem that the methods used by these twenty-two roads should result in substantial accuracy and in uniformity as between the several roads in their reports of gross ton-mileage of cars and contents.

b—Six roads use methods of determining gross ton-mileage from the net weights shown on waybills and wheel reports by the addition of average tare weights established by some method other than by accumulating the stencilled tare weights of the individual cars.

It is assumed that the methods of approximation used by these six roads have been adopted with the object of saving time and labor, which, if actually realized, would stand as the offset to

any possible variation in correspondence between the reported situation and the actual situation.

### Gross Ton-Miles of Locomotives and Tenders—Form OS-A, Item 5

In response to our questions concerning the proportion of the weight in working order of locomotives used in this computation, every road replied that 100 per cent of the weight of the locomotive in working order, plus the weight of the empty tender, is used. It was developed that the proportion of tender coal and water capacity used in this computation is—60 per cent on one road, 65 per cent on nineteen roads, and 66.6 per cent on eight roads. Seven roads use the weights of each individual locomotive; 17 roads use the average weights for each separate class of locomotives; four roads use the average weights for groups of classes having approximately the same weights. It is obvious that there is substantial uniformity in the methods used by the various roads in reporting the gross ton mileage of locomotives and tenders.

### Coal Equivalents of Fuels and Power—Form OS-E, Item 10

Table I—Item 10-01—Gallons of Fuel Oil Equivalent to One Net Ton of Coal

No. of roads	Gallons per ton	B.t.u. value of coal	Method of determination
1	R 115	11,150	Comparative service tests.
1	F 126	10,295	Comparative service tests.
1	R 127	13,800	B.t.u. heat content.
1	R 128	11,300	Comparative service tests.
1	R 137.5	11,500	Comparative service tests.
1	F 140	14,000	Comparative service tests.
1	R 147	11,300	B.t.u. content and thermal efficiency.
1	F 150	13,500	Data based on tests.
1	F 152	10,650	B.t.u. heat content.
1	F 156	13,500	B.t.u. heat content and combustion efficiency.
1	R 157	11,000	Service experience.
1	R 162	11,580	B.t.u. heat content.
1	F 166	14,000	Comparative service tests.
2	R 168	12,500	Comparative service tests.
1	F 168	12,700	Comparative service tests.
1	F 168	13,500	Comparative service tests.
1	R 168	11,000	B.t.u. heat content.
1	R 168	12,000	B.t.u. heat content.
1	R 168	12,600	B.t.u. heat content.
1	F 168	13,000	B.t.u. heat content.
1	F 184	13,700	B.t.u. heat content.
1	F 193.7	13,550	B.t.u. heat content.
1	F 194.5	13,500	B.t.u. heat content.
1	F 195	13,000	B.t.u. heat content.
1	F 215	13,500	B.t.u. heat content.
Averages	161	12,500	

F = Used for lighting fires only.  
R = Used for fuel in road service.

The inconsistencies in the fuel-oil equivalents listed in Table I are apparent, and study of the tables supplies some evidence to support the opinion that an average of 150 gallons, as the fuel-oil equivalent of a ton of coal, would not be far wrong. The committee, therefore, as a basis for discussion, advances the proposal that it would appear equitable for all railroads to use fuel-

Table II—Item 10-02—Kw.-hr. of Electric Current Equivalent to One Net Ton of Coal

No. of roads	Kw. hr. per ton	B.t.u. value of coal	Method of determination
1	R 350	13,800	Comparative service tests.
1	R 380	11,300	Comparative service tests.
1	612	12,700	Comparative service tests.
1	R 720	13,500	Coal consumption per kw.-hr. in company plant.
1	900	12,600	Coal equivalent of oil per kw.-hr. in co. plant.
1	1,333	13,500	Relative B.t.u. values.
1	R 1,333	13,000	Coal consumption in pub. utility plant.
1	1,333	13,700	Coal consumption in pub. utility plant.
1	R 1,333	13,500	Coal consumption in pub. utility plant.
1	1,333	13,500	Relative B.t.u. values.
1	1,380	14,000	Coal consumption in pub. utility plant.
1	2,000	11,300	Relative B.t.u. values and locomotive efficiency.
Averages	1,084	13,035	

R = Electric locomotives used in road freight service.  
Sixteen roads report, "No electric current used."

oil equivalents falling between the limits of 130 gallons and 170 gallons per net ton of coal.

The average kw. hr. equivalents of the three roads shown in



Table II that base their determinations on comparative service tests of their steam and electric locomotives, presumably on the same runs, amounts to 447 kw. hr. per ton of coal. If the two roads that base their determinations on the fuel used per kw. hr. to produce the electricity in their own company plants are grouped with the three roads just mentioned, the kw. hr. equivalent of this group of five roads amounts to 592 kw. hr. per ton of coal.

If, on any identical locomotive run, we consider the replacement of steam-locomotive power by electric-locomotive power, assuming that equal ton mileage is produced by equal power expenditure at the locomotive drivers, we can arrive at a comparison of the

**Table III—Item 10-03—Gallons of Gasoline Equivalent to One Net Ton of Coal**

No. of roads	Gallons of gasoline	B.t.u. value of coal	Method of determination
1	15	13,550	Comparative service tests.
1	23.5	11,500	Comparative service tests.
1	25	11,150	Comparative service tests.
1	28.2	13,500	Comparative service tests.
1	30	11,000	Comparative service tests.
1	40	14,000	Comparative service tests.
1	40	11,300	Comparative service tests.
1	40	13,800	B.t.u. heat content.
1	41.2	10,295	Comparative service tests.
1	50	14,000	Comparative service tests.
1	50	13,500	From data based on tests.
1	50	12,500	Comparative service performance.
1	72	11,300	B.t.u. heat content and relative locomotive efficiency.
1	75	11,000	Comparative service tests.
1	175	10,650	B.t.u. heat content.
1	182	11,580	B.t.u. heat content.
1	192	13,000	B.t.u. heat content.
1	196	12,500	B.t.u. heat content.
1	196	13,500	Comparative service performance.
1	198.7	13,500	B.t.u. heat content.
1	202	12,600	B.t.u. heat content.
1	223	13,500	B.t.u. heat content.
Averages	97	12,420	
Six roads report "No gasoline used."			

coal consumption and the consumption of electric current for equivalent power production that may be considered to be of some interest in connection with this discussion.

Within the range of 3 lb. to 5 lb. of coal per hp. hr. for the steam locomotive, including standby consumption, which will embrace any ordinary operating condition, and assuming 90 per cent efficiency for the electric locomotive and a transmission factor of 80 per cent, the electricity purchased to produce work at the drivers, equivalent to the work produced at the steam locomotive

**Table IV—Item 10-04—Gallons of Diesel Fuel Equivalent to One Net Ton of Coal**

No. of roads	Gallons of diesel fuel	B.t.u. value of coal	Method of determination
YARD SERVICE			
2	15	11,000	Comparative service performance.
1	18.4	13,500	Comparative service performance.
1	20	11,300	Comparative service performance.
1	25	13,000	Comparative service performance.
1	25.5	11,500	Comparative service performance.
ROAD SERVICE			
1	16	13,550	Comparative service performance.
1	20	11,000	Comparative service performance.
1	23	12,700	Comparative service performance.
1	29	11,150	Comparative service performance.
1	33	11,000	Comparative service performance.
1	38	14,000	Comparative service performance.
1	44	11,300	B.t.u. content and locomotive efficiency.
1	46.5	11,500	Comparative service performance.
1	50	13,500	Data based on tests—fuel per hp. hr.
1	98	14,200	Comparative service performance.
1	98	13,500	Comparative service performance.
1	145	13,800	B.t.u. heat content.
1	160	10,650	B.t.u. heat content.
1	168	13,000	B.t.u. heat content.
1	181	12,600	B.t.u. heat content.
1	185	11,580	B.t.u. heat content.
1	194.5	13,500	B.t.u. heat content.
1	195	13,000	B.t.u. heat content.
1	215	13,500	B.t.u. heat content.

drivers by a ton of coal, would range from 695 kw. hr. to 420 kw. hr.

The committee considers that an equivalent value based upon such a strictly statistical comparison as that outlined above, is more consistent with the purpose of the Form OS reports than an equivalent value based upon relative B. t. u. values or the coal consumption in public utility producing plants. Since the equivalent values are finally set up against gross ton mileage in the

calculation of unit fuel performance in terms of pounds of coal per thousand gross ton-miles, it would be natural to presume that a consistent equivalent would be one that would produce a fuel unit in pounds of coal per 1,000 gross ton-miles of the same order of value as that produced on the same territory by steam locomotive operation.

The committee suggests that a range of 30 to 50 gallon per ton of coal should be comprehensive enough for all practical purposes and that values within this range appear to be more consistent for statistical purposes than values outside that range.

As in the case of the gasoline equivalent, the committee would suggest that Diesel oil equivalents (Table IV) in the range of 30 to 50 gallons per ton appear to be more consistent for statistical purposes than values outside that range.

### Allocation of Locomotive Fuel—Form OS-E Items 2-07, 2-13 and 2-22

On twenty-five roads, the charges for fuel disbursed to individual locomotives at all fueling stations are accumulated and the built-up monthly total charge to locomotives in yard service, freight service and passenger service is used as the basis for percentage allocation of the total fuel disbursed during the month. Three roads use other methods of allocation.

On twenty-five roads, the allocation is made for each operating division and the final system report is made from the accumulation of the totals of fuel allocated on all divisions to each of the three classes of service. Three roads report system totals only and use other methods of determining the amounts reported.

In response to questions designed to develop whether any part of the locomotive fuel used in passenger service is charged to the heating or cooling of the trains while running, and whether any part of the fuel or power used by locomotives in yard, freight or passenger service is accounted as standby fuel and allocated to some account other than reported on Form OS-E, Items 2-07, 2-13 and 2-22, all roads answered that no such charges or adjustments of charges are made.

This report was prepared by the Committee on Fuel Records and Statistics. It is signed by E. E. Ramey (chairman), fuel engineer, B. & O., Baltimore, Md.; G. W. Birk, N. Y. C.; P. E. Buettell, C. M. St. P. & P.; J. G. Crawford, fuel engineer, C. B. & Q., Chicago; H. Morris, superintendent fuel and locomotive performance, C. of N. J., Reading, Pa.; E. G. Sanders, fuel conservation engineer, A. T. & S. F., Topeka, Kan.; W. R. Sugg, superintendent fuel conservation and lubrication, Mo. Pac., St. Louis, Mo., and R. J. Tucker, assistant to fuel supervisor, C. & O., Richmond, Va.

## The No. 8-ET Locomotive Brake

The gradually increasing need for better control of the slack movement in long freight trains was anticipated long before the introduction of the AB type freight brake and since then these requirements have been under continuous study with the object of developing such an equipment. This development was carried along step by step under constant checking in laboratory and service experiments by both the manufacturers and the A. R. R. The final result was the No. 8-ET which has now been in daily service on a large number of new locomotives where the improved brake control features have met with universal approval.

The two most important new train slack-control features are the synchronization of the locomotive and car brakes with maintenance of leakage for the service application and the controlled rate of locomotive brake cylinder pressure development for the emergency application.

### Service Application

Brake pipe leakage is unavoidable and while it can easily be measured before the train departs from the terminal, it may change enroute and the engineman can never be sure as to just what the leakage is. He, therefore, plays safe and handles the brake as though a maximum leakage rate existed at all times.

The outstanding improvement in the service function of the



No. 8 over the No. 6-ET equipment is the brake-valve first service position which can maintain against leakage while the brake-pipe pressure is being reduced.

On the basis of having the leakage fairly uniformly distributed throughout the brake pipe length, the relation between A. A. R. leakage rate in pounds per minute and pressure gradient for a 150-car train is about as follows:

A. A. R. leakage		Pressure gradient
1/4 lb.	.....	1/4 lb.
2 lb.	.....	2 lb.
5 lb.	.....	7 lb.
7 lb.	.....	10 lb.
10 lb.	.....	14 lb.

The pressure gradient is an important factor because when the engineman attempts to start a service brake application by moving the brake-valve handle from running through lap to service position, the air flow which is maintaining the leakage is suddenly cut off at the lap position. If at this time there is any considerable pressure gradient in the brake pipe, the pressure in the head cars will continue to flow toward lower pressure at the rear and thus cause a brake-pipe reduction at the head cars even before any service reduction can start. This flow of pressure from front to rear due to the pressure gradient is often called brake-pipe run-away and it usually causes a fall in pressure at the head end which is much more rapid than the normal brake application.

The effect of this pressure run-away is to cause the locomotive and head-car brakes to apply much faster and much stronger than the engineman intends, with a result that a relatively heavy retardation is established in the head portion of the train before any brakes can become effective towards the rear. When this occurs and the train slack is stretched, the slack will close too fast and produce rough shocks in the rear portion of the train. This action is more pronounced at speeds under 20 m.p.h. and its degree is roughly proportional to the amount of pressure gradient existing when the brake valve was placed in the lap position.

The preliminary service reduction of 7 lb. commonly employed with the No. 6-ET equipment to get train brakes applied before heavier brake applications are made, applies the engine brakes with about 17 1/2 lbs. brake cylinder pressure, while the car brakes are applied with about 7 3/4 lbs. This higher engine brake-cylinder pressure, which is roughly one-third of full service engine brake value, produces a greater degree of retardation of the engine as compared with the cars while train brakes are being applied, and, therefore, produces train slack action of more or less objectionable roughness, depending upon other governing conditions.

With passenger trains this frequently causes buffers and draft gears to be compressed and then, when the rear brakes apply and the platform buffers have an opportunity to recoil, an outward jerk occurs. When the head end passenger-train cars are carrying a load, which results in a considerable reduction in the ultimate head and braking ratio, this undesirable slack action is exaggerated.

The No. 8-ET equipment develops brake-cylinder pressure at the same low initial value as the car brakes and, therefore, the tendency of the locomotive to cause heavy inward slack action of the train at the start of a service application is reduced to a negligible amount. This is accomplished automatically.

### Emergency Application

When an emergency application is made with No. 6-ET equipment, maximum emergency brake-cylinder pressure retarding forces are developed on the engine and tender as quickly as the distributing valve can supply air from the main reservoir. The unavoidable result of this with a freight train is to cause the engine to back heavily into the train, first gathering slack in a number of the head cars, after which the train slack closes one car at a time with increasing velocity and violence as the slack closure advances toward the rear of the train. This objectionable result can only be avoided in long freight trains by so controlling the development of pressure in locomotive and tender brake cylinders that the engine will act to hold the slack stretched in the front end of the train until the rear train brakes begin to apply.

The No. 8-ET equipment has a controlled emergency feature

which can be set from the cab according to moderate or long freight-train length so that this too rapid development of locomotive brake-cylinder pressure and resultant slack action is avoided during emergency application with long trains.

The importance of the features described will in themselves justify the elimination of the No. 6-ET and substitution of the No. 8-ET on freight or passenger locomotives in road service. However, there are many additional valuable advantages.

A fundamental principle carried throughout the design of the No. 8-ET equipment is the maximum integrity for all functions. To this end pipe connections are strengthened with reinforced pipe fittings. Also, the greater facility for locating the equipment parts affords an opportunity to place the piping in a protected position and finally, these new features, added to the normal functional parts of the distributing valve, provide a factor of safety for the application and release functions which is not equalled by other locomotive brake equipment.

The report is signed by G. H. Higley (chairman) general air brake inspector, Erie, Cleveland, Ohio; R. E. Baker, general supervisor air brakes, air conditioning and power plants, B. & M., Boston, Mass.; J. Kane, enginehouse foreman, D. L. & W., Groveland, N. Y.; J. H. Glenn, traveling engineer, P. & W. V., Pittsburgh, Pa.; Geo. Furgeson; H. P. Bender, mechanical engineer, P. & L. E., McKees Rocks, Pa., and J. Mutter.

## High Speed Braking

### D-22 Control Valve Now Standard for High Speeds

The U. C. valve, with some minor improvements, remained standard for many years, until passenger train speeds suddenly increased from 60 and 70 m. p. h. to 90 or 100 m. p. h. It then became evident that a much faster service brake was required and the electro-pneumatic feature was introduced; however, as the first high-speed trains consisted of only three cars the purely pneumatic portion of the brake consisted of a plain triple valve, without quick service or any provision for added cylinder pressure in emergency except through the straight air feature.

When longer high-speed trains were to be built it was evident that the control valve must have all of the features of the U. C. valve plus the electric straight air. In addition, in order to insure a safe stopping distance from the higher speeds, higher braking powers had to be used. This resulted in the development of the No. 22 control valve with speed governor control, which incorporated all of these necessary features. This valve has been modified considerably to improve its operation but the essential features have not been changed.

The D-22 control valve with various lettered suffixes is now considered standard equipment for all new passenger cars; the electro-pneumatic straight air feature may be added if desired and will cut the time required for service applications 75 per cent. If the braking power is to be in excess of the conventional 150 per cent the speed governor is a necessary addition on all cars using the standard clasp brake.

When the speed of passenger trains exceeded 80 m. p. h. it became apparent that a new phenomena had to be dealt with in braking, which had not appeared at lower speeds; this was the bursting into flame of brake shoes when fairly heavy shoe loads were used at the higher speeds. This results in a very real fire hazard and also a very erratic friction curve, which, under the right combination of speed and pressure, may give an unusually high friction value momentarily and slide the wheels. To overcome this condition the American Brake & Shoe Foundry Co. designed a shoe with carbon blocks cast in the metal. This shoe reduces the flaming to a point where it is not dangerous and prevents sudden high friction peaks.

The principal shortcoming of the conventional brake when used on high-speed trains is the changing coefficient of friction, which varies from about .05 at 90 m. p. h. to about .25 at 20 m. p. h., which means that in order to obtain anything like a constant rate of retardation it is necessary to use extremely high braking power at high speed and provide an automatic means for reducing the cylinder pressure in steps, as the speed reduces; even with this arrangement it has not been practical to develop a retardation rate of over 2 m. p. h. per sec. until the speed is reduced to about 70 m. p. h., whereas the wheel-rail adhesion on a dry rail will permit a retardation rate of 3

m. p. h. per sec. or more at 90 m. p. h. if the braking power could produce it.

It is obvious that the highest rate of retardation permissible by wheel-rail adhesion, right from the instant the brake is applied, will give the shortest possible stop; to accomplish this the brake must produce a fairly constant coefficient of friction, and the adhesion between the wheel and rail must likewise be fairly constant.

The first problem has practically been solved by the automotive type disc brake.

### Operation of the Budd Brake

The Budd disc railway brake\* overcomes pitching of the truck upon application of the brakes because the two middle C-frame supports which exert a force tending to rotate the truck in a counter clock-wise direction, or in other words to raise the front end of the truck, exactly oppose or cancel out the forces acting on the truck center which try to rotate the truck in a clock-wise direction, or cause the truck to pitch downward. Therefore, since these two forces exactly balance each other, the truck stays level. The result is a smoother brake application, with no spring windup to be suddenly released upon completion of the stop or the release of the brakes, causing a jerky uncomfortable stop.

When the brake is applied air under pressure is admitted to the cylinders forcing the pistons outwardly from the cylinders, spreading the tongs which pivot about the fulcrum pins and squeezing the two shoes with their composition lining against both sides of the disc, just as though the disc were clasped with a pair of pincers.

The friction developed between this shoe lining and the disc stops the revolving disc and in turn the wheel to which the disc is securely fastened. In this manner nearly all of the heat generated by the application of the brake is thrown into the disc, which is so designed with openings and cooling fins as to carry this heat off quickly into the surrounding air, saving the wheels from wear and heat.

The only appreciable wear occurs to the brake-shoe lining segments and these can be readily replaced by new ones when necessary.

### Wheel and Rail Adhesion

Quite a number of conditions effect the adhesion between the wheel and rail, such as water, frost, worms or insects, the humidity of the air, low rail joints, crossings and switches. At present the only means we have to overcome these things is to blow sand on the rail in front of the wheel. While this method is fairly effective at low speeds, it is of little value in the higher speed brackets, as very little if any sand actually gets under the wheel.

What is needed is some means for getting an abrasive (not necessarily sand) on the rail or wheel at high speed, which will be as effective as the present sanders are at low speeds. Even then the adhesion between the wheel and rail is reduced as the speed increases, due to the constant change of wheel load on the uneven rail surface. Any slight out-of-balance condition of the wheels sets up a dynamic augment similar to a locomotive driver and this also will change the wheel load at each revolution. All of this means that as train speeds increase it becomes more and more important to have a perfectly uniform rail surface, also perfectly balanced and perfectly round wheels, if a high rate of retardation is to be obtained at high speed. Unless this can be done, the factor of safety, as it is effected by the ability to stop, will decrease in about a direct ratio to the increase in speed.

The Westinghouse Air Brake Company has now developed a practical device for preventing wheels from sliding. This device is used in conjunction with automatic cylinder pressure control with clasp brakes or by itself with disc brakes.

### The Speed Governor and Decelostat

Referring first to the regulation of the brake-cylinder pressure through changes in speed. In view of the fact that the coefficient of friction between the metal shoe and the car wheel increases with the reduction in speed, it follows that ideally the brake-cylinder pressure should be regulated continuously down-

ward to counteract this phenomenon. Actually it is not necessary to have the regulating device perform so precisely. From actual road tests, it has been found that it is sufficient to regulate the pressure from the maximum to the minimum in four steps and that a very close approximation to the ideal is secured thereby.

The means by which this desirable function is accomplished consists of a current-generating device that registers train speed through the medium of voltage change and electric relays that are tuned to react to the prevailing voltage at predetermined speeds and thereby bring about the desired regulation of brake-cylinder pressure.

The brake-cylinder-pressure regulating device, termed a differential relay, is electro-pneumatic in form and it is caused to function by the electric relays to regulate the brake-cylinder pressure in accordance with a predetermined plan. This plan, of course, is flexible and several combinations are in use today but the one most generally employed will be described here as representative of them all.

We have said that the maximum braking ratio with speed pressure control is raised from the conventional of 150 per cent to 250 per cent of the car weight. This braking ratio prevails from top speed for the train down to 65 m. p. h. At approximately 65 m. p. h. the first speed-sensitive doctor relay functions and the electro-pneumatic relay initiates a reduction in brake-cylinder pressure. If the stop is being made at the maximum contemplated rate, such as prevails with an emergency application, the first brake-cylinder-pressure reduction is completed about the time the train speed is reduced to 40 m. p. h. At this point the second speed-sensitive relay functions and the differential relay now initiates the second brake-cylinder-pressure reduction.

The braking ratio during this time has been reduced to 150 per cent. At 20 m. p. h. the third and last speed-sensitive relay functions and the differential relay initiates the third brake-cylinder-pressure reduction. The braking ratio is thereby reduced to 100 per cent and this value prevails to the stop.

By the same means the brake-cylinder pressure for stops from intermediate speeds is limited to the value that is suitable for the particular speed at which the application is initiated.

One striking example of the advantage of this plan of brake-cylinder-pressure regulation is on the occasion of an emergency brake application by the conductor's valve at low speed, such as when starting out of a station.

There are two plans for applying speed-pressure control, both of which are in use today. For trains which remain permanently coupled, two centralized speed-control units regulate the entire train. For trains that may have their consist altered, individual speed-control units are applied to each car. With the first plan, control wires are run from the centralized units throughout the train, and with the second plan, each car is a self-contained unit in itself. The second plan is obviously more flexible and the full benefit of the modern and powerful brake is always available in trains of any consist.

For wheel-slip protection the speed-control generator is used also for the protection of its particular axle and the same type of electric generator is added to each of the other axles of the train. Two of the electric relays used for speed governor control are likewise given a dual function to perform and other electric relays of similar appearance and size, but different in function, are added to the relay panel. The electric relays used for wheel slip protection are so constructed as to be responsive to a certain rate of change in speed.

It may be asked if this anti-wheel slip device, which we have termed "Decelostat," will lengthen the stopping distance if it functions as a result of a wheel slipping, and particularly in high speeds. The answer is that it does not, as has been demonstrated by actual road tests. As a matter of fact, the stopping distance is shortened because a sliding wheel is not as effective in stopping a vehicle as one braked just under the point of wheel sliding. The ability to increase materially the braking effort in the manner in which we have described makes possible consistent maximum brake performance under all kinds of adverse conditions, equivalent to the best performance that otherwise is only possible under the most favorable rail conditions.

This device is working very satisfactorily and makes it possible to brake up to the limit of wheel-rail adhesion at all speeds without fear of wheel damage.

The report is signed by H. I. Trambly, supervisor air brakes, C. B. & Q.

\*For a description of this brake, developed by the Budd Wheel Company, see the article entitled "C. B. & Q. Installs Ninth Zephyr," in the *Railway Age* for April 29, 1939, page 727.



# 8 YEARS' DISCUSSION OF BUSINESS

**E**IGHT years ago (on September 17, 1932) the *Railway Age* published the first editorial that appeared in its columns during the depression indicating a belief that "a real improvement in general business had begun."

Throughout the subsequent eight years it has been calling attention to the upturns and downturns of general business that have occurred, as shown by fluctuations in loadings of freight. It has advocated certain government and business policies as conducive to recovery, and opposed and condemned others as inimical to recovery. It was the first publication in the United States to criticize certain important New Deal policies—especially NRA and huge government spending—upon the definite ground that they were economically unsound, and would retard or arrest the recovery which this was apparently the first publication to say definitely, as early as September, 1932, had actually commenced.

As a contribution to the discussion of what has been done, what should not have been done, what should have been done, and what should be done in future to promote recovery, this paper ventures, in the hope that they may be helpful, to publish the following quotations from editorials that have appeared in its columns during the last eight years:

## The Beginning of Recovery

September 17, 1932.—The statistics of freight car loadings for recent weeks indicate that a real improvement in general business has begun.

October 29, 1932.—The increase in car loadings between June and October, 1932, which was **seven times** as great as between the same months of 1930 and 1931, is the most conclusive answer that could be given to the question as to whether business at last has begun substantially to improve. **This improvement unquestionably is mainly due to natural economic developments.**

February 4, 1933.—Readjustments already made, and increasing confidence and courage among business men and the public generally, explain the improvement that already has occurred, and there seems good reason to hope that the operation of economic forces will overcome the resistance of organized minorities, and that the improvement already begun will continue.

## What Government Should Do

March 4, 1933.—This paper believes the purely economic problems that must be solved to revive business are plainer and simpler than most persons think . . . **What government should do is, not to try to tell the people what to do, and tax them to death to carry out the theories of politicians and bureaucrats, but reduce their taxes and release their brains and energies in order that they may do as well as they can for themselves.**

March 25, 1933.—The government closed the banks to stop the drain upon them, and a large majority of banks have now been reopened under legislation enabling the government to restrict withdrawals which assure their

continued solvency . . . Increase of public confidence has been shown by innumerable public and private expressions and by advances in the security and commodity markets, although some proposed legislation, such as that for farm relief, has been received with misgivings by business.

April 29, 1933.—In view of the fact that the general trend of business has been decidedly better for almost eight months than it was before, in spite of serious retarding influences, **many students of economics and business must seriously question the expediency of numerous kinds of legislation which are being advocated in Washington as essential to economic revival.**

May 6, 1933.—**Any policy which has not increased production in industry as its main objective will make no permanent contribution either to increased employment or to increases in the real incomes of those who get employment.**

May 20, 1933.—There is an evident determination in Washington to spend large amounts of government money to stimulate a revival of business. **The less of it is spent on public works of doubtful value, and the more of it is spent to increase employment in the private industries in which the decline in employment has occurred, the better it will be for everybody.**

## The "New Deal" Begins

June 24, 1933.—The "New Deal" in the economic affairs of the United States began when Congress adjourned last week . . . It is, however, seriously questionable whether the heroic measures adopted were not ceasing to be needed and what effects they will produce.

July 15, 1933.—As the improvement actually began ten months ago, it is plain it has been mainly due to the same general economic causes which terminated all previous depressions . . . The *Railway Age* is frankly skeptical regarding the extent to which general business will be either temporarily stimulated or permanently benefited by the government's public works program, or by any policy of actual inflation which it may adopt . . . **The government can help or hinder, but government direction and action can never, until a complete policy of socialism has been adopted, serve as a substitute for private initiative and enterprise.**

September 9, 1933.—General business, as measured by freight car loadings, improved more than seasonally in April, May, June and July, and then improved less than seasonally in August . . . **It seems highly probable that in large measure the reaction in August was due to new problems and uncertainties injected into business by the government's various recovery policies . . . Much alarm has been spread through business by the apparent tendency of the government to favor a labor policy which labor leaders throughout the country construe to mean the closed shop. In consequence, the administrators of the government's policy have succeeded in spreading fear instead of confidence through a large part of business. The fear of losses and boycotts is not**



# INNESS AND BUSINESS PROBLEMS

**How editorials in the Railway Age from September 17, 1932, to the present time have pointed out the upswings and downswings of business, have predicted in advance the effect on recovery which specific government policies would have; have opposed policies which would prevent recovery; and favored policies which would aid it**

a good substitute for confidence among business men as a means of promoting recovery.

September 23, 1933.—From the beginning we have regarded with skepticism the industrial and agricultural recovery policies of the administration, fearing, among other things, first, that they would prevent an adequate increase of agricultural purchasing power by unduly increasing the production costs and prices of things that the farmers must buy, and second, that by increasing costs in industry they would cause industrial concerns to raise their prices to reduce their losses or increase their profits with the effect of curtailing the effective demand for their products.

September 30, 1933.—The trouble with certain half-baked economic theories that recently have been widely disseminated and accepted is, that they disregard facts of the most vital importance. Among these facts are, that that large part of the important industries of this country which is devoted to the production of capital goods has been developed to provide means of increasing production and reducing the labor cost of production; that the sole motive of business men in trying to increase production and reduce its cost is to reduce losses and increase profits; and that therefore **any government policy which even temporarily discourages efforts to reduce losses or increase profits tends directly to prevent revival of the capital goods industries and of employment by them.**

## **Government Policies Cause Recession of Recovery**

October 21, 1933.—The figures show there was a marked improvement in business during the last one-third of 1932, and another marked improvement during April to July, 1933, inclusive, during which the recovery policies of the administration affected business only by anticipation, while since July there has been a steady recession as a result of which in the two weeks ended October 7 business was only slightly better relatively than in June and only relatively as good as in December, 1932. . . . The only new and important influences by which business has since been affected have been the administration's revolutionary policies. Developments under them have not altered our belief in the desirability of giving nature a large measure of opportunity in business in general and on the railroads in particular.

November 4, 1933.—Freight car loadings are the best

single measure of the total volume of business activity, and, General Johnson to the contrary notwithstanding, they demonstrate that for three months the trend of business has been downward. . . . **Government policies which tend to monopolize the market for capital and to restrict profits in private business tend directly to delay financing of the expansion of private business.**

December 16, 1933.—In view of the industrial history of the last one hundred years and of existing conditions, it is a preposterous exhibition of ignorance and lack of foresight to imply that the observance of sound economic principles by government and business will not cause future increases of production, commerce and the national income which will make the production, commerce and national income of recent years of prosperity seem small. . . .

February 24, 1934.—Until government and business can and do effectively co-operate to increase the profits in business which are necessary to make possible a large increase in buying from the durable goods industries there will be no real economic recovery in this country.

May 12, 1934.—The principal menace to the continuing revival of business is that production costs and prices may be advanced more rapidly than economic conditions warrant, with the effect of impairing the buying power and effective demand of both industries and individuals. That advances in wages increase costs of production, and that increased costs of production necessitate advances in prices, seems axiomatic; but increases in the total volume of production and commerce are the things needed fully to revive business, and general advances in prices are a very doubtful means of increasing the demand for commodities.

## **New Deal Retards Recovery**

August 11, 1934.—During the eleven months from September 1, 1932, to July 31, 1933, the present revolutionary "recovery" and "reform" policies of the Roosevelt administration were not in effect. General business, as measured by car loadings, improved throughout this period excepting during the banking crisis in the first quarter of 1933. What has occurred since August 1, 1933, under the novel "recovery" policies illustrated by NRA, AAA and the public works program? General business, as measured by car loadings, declined in August, September and October, 1933, increased during

the next five months, and declined again during the next four months. The net result was that car loadings in July, 1934, were 5½ per cent less than in July, 1933. . . . **No sound economist or intelligent business man can agree any longer with policies predicated upon the assumption that labor costs in industry should be advanced to increase national purchasing power; that the profits in the industries that must be relied upon to buy from the durable goods industries can be reduced and the durable goods industries at the same time be revived; or that an orgy of government spending and taxing, together with other policies such as those just mentioned, can ever "prime the pump of business."**

September 22, 1934.—Very much the worst phase of the situation is the decline of production and commerce. . . . This paper predicted from its inception that the New Deal would hinder the natural improvement which began two years ago, but we believed the natural forces of recovery would prove stronger than the New Deal policies. The great drought and the New Deal combined have, however, recently proved too strong for these natural forces.

#### Severe Decline in Car Loadings

October 13, 1934.—Huge government expenditures for so-called—and often loosely called—public works began late last year. Intended to "prime the pump" of general business, they did have the effect of starting the trend of carloadings upward again, and in March, 1934, a new peak was reached. . . . Early in the spring of this year not even a continuation of heavy government expenditures could overcome the growing lack of confidence in administration policies, and the relative rise in carloadings was succeeding by a decline. . . . **The last drop in carloadings, from March to September, was the most extensive and long continued decline since the first half of 1932. . . . Far from helping business recovery, the policies of the New Deal have plainly hindered it and reversed an upward trend which, before the New Deal began, had continued with only one interruption for a full year.**

November 3, 1934.—**The only way out is clear. This is to change economic facts and prospects by changing government and business policies.** The durable goods industries are the key to the present situation. . . . A large and lasting increase in buying from them can be accomplished only by increasing the profits of the railroads and other industries. Increase of profits in general business is dependent upon increases in the volume of production and commerce unaccompanied by corresponding increases of operating costs until production and commerce approach normal.

February 23, 1935.—It cannot be said that much recovery has been accomplished when, since August, 1932, general business has regained less than one-third of the ground that it lost during the preceding less than three years. **In large measure the recessions of business, and consequent small total recovery accomplished, especially during the last two years, have been due to well-intended efforts to prevent the next depression and its effects, whereas the real and pressing problem is to terminate the present depression and its effects. . . . The best way to provide relief and security is to restore to the unemployed at reasonable wages the jobs in private business that they formerly had.**

April 6, 1935.—Almost a year ago—on April 26, 1934—the railways agreed to rescind, in installments on July 1, 1934, and January 1 and April 1, 1935, the deduction of 10 per cent from basic wages put into effect

in February, 1932. . . . They hoped for continuance of the improvement in business which apparently had been occurring during the last quarter of 1933 and the first quarter of 1934. . . . General business, and consequently traffic, have fluctuated, but there has been no improvement. . . . **The railroad situation with which the nation is confronted is actually the worst since the early part of 1932, and it is so bad because the administration and Congress for two years have done little to help recovery and much to prevent it.**

#### Prediction Re Supreme Court's N. R. A. Decisions

June 8, 1935.—**The Supreme Court's NRA decision probably will prove the best thing for general business and all classes of the people that has occurred since the banks were closed and re-opened in March, 1933, because it makes possible at least a partial resumption of the operation of natural economic forces which has been for almost two years interrupted by artificial influences.**

August 17, 1935.—Since the middle of July car loading have shown an upward trend. The improvement in general business which this and other developments indicate has begun probably is principally due to the decision of the Supreme Court in the NRA case, which destroyed one of the government's principal policies that were hindering recovery.

September 28, 1935.—The trend of general business has been more sharply upward since early in July than during the latter part of summer in any year since the depression began. Car loadings have almost continuously, week by week, made more than seasonal increases. In the nine weeks ending with the middle of September they increased less than 3 per cent in 1930, declined 2 per cent in 1931, and increased almost 17 per cent in 1932, 1 per cent in 1933 and 7 per cent in 1934. During the same period in 1935 they increased almost 24 per cent. . . . The improvement of general business, and consequent increase of car loadings, are giving the railroads the principal thing they need—an increase of gross earnings.

December 7, 1935.—The improvement in business which has been occurring through the last four months is real and substantial and bids fair to continue. . . . Like that which began in 1932, **the current improvement must be attributed by every person whose conclusions are based on economic facts and principles solely to the operation of natural economic forces.** In the long run these forces usually prove stronger than all the efforts of politicians to stimulate or hinder their working. . . . After listening to the nostrums of theorists and politicians, the people always finally decide it is time to go to work, and by their mental and manual labors, to increase production of goods—the only source of wealth and income.

#### Most of Recovery Before New Deal

December 14, 1935.—This is the first year since 1932 when the trend of net operating income was upward during the fall months. . . . **The reason why the recent rapid increase in net operating income is so important to the manufacturing industry is that, as repeatedly has been statistically demonstrated by the *Railway Age*, the amount of railway buying done from manufacturers is determined, not only for long periods, but year by year, and almost month by month, by the amount of net operating income earned.**

March 7, 1936.—There has been need for more buying of railway equipment and other facilities throughout



the depression. **The cause of the actual increase now occurring is the increase in net operating income earned throughout the seven months August to February, inclusive, and which will continue unless arrested by a recession of traffic, or by the adoption of more government policies increasing railway operating expenses. . . .**

July 4, 1936.—**The most spectacular increase in railway purchasing since the beginning of the depression was made in the first six months of this year. . . . Counting both materials and equipment purchases from manufacturers, the total business done with manufacturers since January 1 was an increase of \$120,000,000 or 60 per cent above the total for the first six months of 1935; an increase of \$56,000,000, or 20 per cent above the corresponding figure for 1934; an increase of \$215,000,000, or almost double the figure for 1933; an increase of \$27,000,000, or almost 10 per cent above the six months of 1931.**

August 15, 1936.—**Of the entire increase in average weekly car loadings that occurred between the bottom of the depression in July, 1932, and July, 1936, over 63 per cent occurred between July, 1932, and July, 1933, before the New Deal policies were in effect, while less than 37 per cent of it occurred during the subsequent three years, during which all or part of the New Deal policies were in effect. The increase in average weekly car loadings in July, 1933, over July, 1932, was 141,421, while the increase in average weekly car loadings in July, 1936, over July, 1933, was only 81,790. . . . Many persons largely attribute the recovery that has been occurring within the last year to government spending, and fear its reduction would cause a recession of business. But there was no huge government spending in the year ending with July, 1933, when there occurred 63 per cent of the entire increase in railroad loadings that has occurred since the bottom of the depression was reached. . . . The indisputable facts demonstrate that the bulk of the recovery from this depression that has thus far been made cannot, by any rational and unprejudiced person, be attributed to artificial measures, including government spending.**

### New Deal

September 26, 1936.—**Federal expenditures for waterways and highways under President Hoover were excessive and indefensible and were then criticized as such in these columns. . . . But along comes the New Deal and in the last fiscal year boosts waterways appropriations from the Hoover average of 120 million to a new high of 364 million, an increase of 201 per cent. And the Hoover average of 123 million for federal aid to highways is advanced to \$625 million for the current fiscal year, an increase of 408 per cent.**

October 24, 1936.—**As a business paper the *Railway Age* . . . believes the recovery that has occurred is real. . . . Has demonstrably occurred in spite of the principal policies of the Roosevelt administration, and would have been greater excepting for these policies. . . . The President assumes in his speeches that the decline of business continued without interruption until it reached bottom in March, 1933, when he was inaugurated. This assumption is not true, distorts the entire history of recovery to the present time and makes rational consideration of the causes of recovery impossible.**

**. . . There have been three periods of recovery. The first was during the last four months of 1932; the second during the four months April-July, inclusive, 1933; the third since July, 1935. . . . In May,**

**June and July, 1933, when it is now represented the nation was traveling rapidly toward ruin, business had so far recovered from the effects of the banking crisis that freight loadings were 17 per cent larger than in the same months of 1932, . . . railway net operating income increased from \$36,200,000 to almost \$165,000,000, or 360 per cent. If such facts show we were on the road to ruin during May, June, and July, 1933, it is a great pity that we were so soon de-toured from it.**

**. . . The third period of recovery began in August, 1935, and had continued without interruption until the middle of October, 1936, when freight loadings reached 71 per cent of their 1925-1929 average. What caused this third period of recovery to begin? There had occurred only one great change affecting business. This was the destruction by a decision of the Supreme Court late in May, 1935, of NRA, the most important policy of the New Deal. . . . The only periods during which there has been any recovery from this depression, have been in the year before the principal New Deal policies were adopted and in the seventeen months since some of the most important of these policies began to be destroyed by court decisions.**

November 7, 1936.—**A large majority of business men and economists opposed Mr. Roosevelt's re-election upon the ground that certain of his past policies. . . . had been inimical to recovery, and that the pursuit of similar policies in future would hinder continuance of recovery and finally lead to ruinous inflation. . . .**

**If continued improvement in business does not occur there will be a reaction of public sentiment against the President and his policies before the next Congressional . . . election among the same voters who supported him because business has improved. If business continues to improve, whether because of or in spite of his policies—, well, that will be just what business men want.**

December 5, 1936.—**. . . It is unfortunate that when the improvement in business has acquired such momentum as to indicate that, unless interrupted by new influences, it will continue until prosperity and employment are fully restored, there should be much agitation for government policies based upon the assumption that further government interference with business is needed to restore employment.**

January 2, 1937.—**The railroads have just finished their most successful year since the first year of the depression—1930. They have entered the year 1937 with good prospects. . . .**

**The most outstanding development in the field of transportation in 1936 was the large increase of railway buying of equipment and materials to \$727,000,000. . . . Comparable figures . . . for 1929 and the depression years are as follows: 1929, \$1,428,000,000; 1930, \$876,000,000; 1931, \$488,000,000; 1932, \$271,000,000; 1933, \$273,000,000; 1934, \$464,000,000; 1935, \$403,000,000. . . . While recovery of the railways and industries dependent on them for a market is well started, it is only well started. Railway gross earnings of approximately four billion dollars in 1936 were considerably less than two-thirds as large as the average annual gross earnings earned in the five years ending with 1929. . . .**

**What will be the purposes and effects of increased government regulation of other industries? . . . Will the ultimate effects upon industrial profits and security prices be similar to those that have been produced on railway profits and security prices?**

March 27, 1937.—**The outstanding characteristic of the depression from which we have been emerging has been the lack of balance between prices of the various groups of basic commodities. In "normal" times, prices**



of farm products, of metal goods, of transportation and electric power are in such balance with each other that people producing each of them are making enough money so that they can buy all of each other's products. . . . The lack of balance which characterized, and to a large extent caused, the depth of the recent depression lay to a large extent between the prices of commodities produced under free competition and those which by some artificial means—monopoly control or otherwise—were prevented from fluctuating in equal measure with competitive prices. . . . Under this wide discrepancy in prices, farm incomes were reduced abysmally, and as a result farmers could not purchase manufactured goods and industrial products in normal amounts at the relatively undepressed industrial price level.

June 5, 1937.—Obviously, the most important problem with which we are confronted, in considering how to provide an "abundant life" for all, and especially for the masses, is one that no real or self-constituted leader and spokesman of the masses ever even mentions—viz., **the problem of increasing production**, and especially of increasing production of consumable necessities, comforts and luxuries, at costs that will enable the masses to buy them.

July 17, 1937.—Four years ago this month the recovery policies of the New Deal began to go into effect. . . . The amount of freight shipped by railroad is the best single measure of total production and distribution. . . . How large is it now after four years of "recovery" . . . ? In the first five months of 1937 carloadings of freight were almost 49 per cent larger than in the first five months of 1933, but **were still 25 per cent smaller than in the first five months of 1929**. . . . The failure of the railways to recover is mainly due to lack of recovery in some of the most important industries from which they derive their traffic. . . .

The American Federation of Labor estimated last week there are still 8,000,000 unemployed. The lagging of building alone is sufficient largely to account for this. . . . Railroad freight loadings in the first five months of 1937 were 15.6 per cent larger than in 1936. **In June they were only about 9 per cent larger, and indicated that the pace of recovery, which during the preceding four years had been slower than after any preceding depression, was declining.**

August 21, 1937.—**The improvement in general business, and consequent increase of freight loadings, that occurred in the early part of the year are not being maintained.** The increase of freight loadings averaged . . . only 6.6 per cent in the ten weeks ending with August 7.

September 11, 1937.—**It is a national tragedy and disgrace that eight years after the first great break in the stock market in 1929 the total volume of business being done in the country should still be smaller than it was in any year between the depression that ended in 1922 and the depression that began in 1930, and that in addition business should now actually be growing worse.**

September 18, 1937.—The only kind of "confidence" that helps business . . . is a well-founded confidence among business men that they will derive reasonable profits from any new investments they make; and their confidence or lack of it in new investments is determined mainly by the profits they are deriving and expect to be allowed to derive from investments already made.

. . . It is as essential to prosperity that the capital invested in a particular industry or in industry as a whole shall be paid reasonable wages as that the labor it employs shall be paid reasonable wages; and any poli-

cies of government or business or both which prevent capital from being paid a reasonable wage will as certainly prevent prosperity as any policies that prevent labor from getting a reasonable wage.

October 9, 1937.—The recent agreements by the Carriers' Conference Committee and the labor unions resulting in advances in railway wages of about \$135,000,000 annually . . . temporarily at least, reduce the net operating income of the industry to a lower level than it reached in any year of the depression excepting 1932. . . . Railway managements considered that it was a "condition, not a theory," with which they were confronted. The "condition" was the attitude of the present national administration toward labor and wages.

October 23, 1937.—. . . Allowing for seasonal variations, the country's total volume of construction, production and commerce declined relatively about 15 per cent within the last five months. . . . **The occurrence of so sharp a recession when, although the real bottom of the depression was five years behind us, full recovery had not been accomplished, demands a more adequate explanation than it has yet been given.** . . . Some of the principal taxing and regulating policies of the New Deal undoubtedly are in large measure responsible for the failure of complete recovery to occur and for the recent recession in business. . . .

. . . It seems an indisputable fact that most of the advances in wages that recently have been made in industry have been made to placate the administration and labor rather than because managers of business have believed that they were unavoidable or economically justifiable. . . . The major economic policies of the New Deal are a failure if their purpose has been to restore prosperity, because during four years of them recovery from the great depression was slower than it ever was from any previous depression, and such recovery as had occurred has now been followed by a sharp recession of business.

November 20, 1937.—In his message to Congress on Monday, President Roosevelt said, "Over a month ago I quoted one of the country's leading economists to this effect—that the continuance of business recovery in the United States depends far more upon business policies than it does upon anything that may be done or not done in Washington." This statement, made during a business recession, is in striking contrast to the President's widely quoted declaration when business was improving. "We planned it that way, and don't let anybody tell you otherwise." **To claim credit for what is done in Washington for business improvement, and "pass the buck" to business policies when business is declining, may be good politics, but it is mighty poor economics.**

December 18, 1937.—Why has total business declined so much? . . . **Economic balance** is absolutely essential to improving business and prosperity. . . . Continuing through September, 1937, there were large advances in wages and prices in most industries; while during the six months April to September, 1937, there was a steady decline in the prices of farm products. . . . Meantime also the federal government discouraged investments in all industries by passing a law heavily taxing undistributed earnings and by proposing one to further increase wages, reduce working hours and increase costs of production. . . .

Since the spring of 1933 government has been constantly trying to regulate the balance **between** industries and **within each industry** to benefit farmers and wage-earners at the expense of capital already invested and that should have been invested. The unprecedented

failure of recovery and the recent unprecedented recession of business are a conclusive commentary upon the wisdom and value of the policies adopted for this purpose.

June 25, 1938.—In the first quarter of 1932 the railways earned a net operating income of \$66,000,000 or at an annual rate of 1.28 per cent; in 1933 of \$34,000,000, or at an annual rate of 0.67 per cent; and in 1938 of \$19,300,000, or at an annual rate of 0.39 per cent. In April, 1938, after the advance in rates was in effect, their net operating income was almost \$10,000,000 less than in April, 1933 and 90 per cent less than in April, 1929.

November 5, 1938.—The fourth more than seasonal increase of freight loadings during the depression began immediately after the "recession" reached its bottom about the middle of last May, and has continued until the present time or about six months. . . . In May, 1938, the worst month of the "recession," net operating income was only \$16,500,000. . . . Net operating income in the first two-thirds of 1932 was \$152,295,000, and in the first two-thirds of 1938 was \$154,712,000, and if it should be about the same—\$182,000,000—in the last third of 1938 as in the last third of 1932, it would be for the entire year about the same as in 1932.

January 7, 1939.—The results of railway operation in 1938 demonstrated more conclusively than those of any previous year the existence, the seriousness and the difficulty of the railroad problem in the United States. . . . **The railways earned \$365,000,000 net operating income . . . the smallest amount earned in any entire year of the depression excepting 1932, being . . . about \$110,000,000 smaller than in 1933. . . . On the basis of the traffic, rates, wages, prices and taxes of the first half of 1938, the railway industry of the United States as a private enterprise was doomed to early financial destruction. . . .**

But during that first half of 1938 hardly a finger was lifted by any person, agency or interest to help railway management pilot private ownership through the most critical and threatening crisis in its entire history. . . . The President of the United States publicly announced his opposition to any reduction of wages when the smallest net earnings in modern history were being made and traffic was still declining. . . .

May 20, 1939.—**Unsound economic policies have ruined more nations than war. We are giving the best exemplification in all history of how to ruin a nation by such policies. . . . Statistics from every part of the world demonstrate that . . . from 1933 to 1937 recovery proceeded more slowly in the United States than almost anywhere else, and that since the middle of 1937 this country has suffered more from "recession" than any other. . . .**

The New Dealers say we must continue huge government spending until the national income is increased to 80 billion dollars a year. We recovered from previous depressions without such spending; and there is no evidence whatever that it has contributed toward recovery from this one. Quite the contrary. . . . Statistics of the National Bureau of Economic Research show that our national income reached a maximum of almost 84 billion dollars, or \$688 per capita, in 1929. . . . In 1938 it was only \$407 per capita. Therefore, it would require an increase per capita of almost 70 per cent to restore it to what it was in 1929. . . .

The economic policies that have prevailed in this country for years, and especially during the last six years, have curtailed the national income by many billions of dollars annually.

June 10, 1939.—The railways' net earnings determine absolutely, over periods of years, the amount of their

buying from the manufacturing industry. . . . In the seven years ending with 1938 the railroads made \$4,369,043,000 less net operating income than in the seven years ending with 1929. . . . Purchases were \$5,508,730,000 less. . . . The decline in average annual net earnings was 624 million dollars, or 56 per cent; the decline in annual purchases 787 million dollars, or 61 per cent. . . .

It has been repeatedly said, and truly, that the revival of home building, of railroad buying and of public utility development are the principal essentials to complete recovery of business in the United States. . . . In the first five months of 1937 residential contracts were 466 million dollars and railroad buying from the manufacturing industry was 452 million dollars—a total of 918 million dollars. In the first five months of 1939 residential contracts had increased to 613 million dollars, but railroad buying from the manufacturing industry was only about 233 million dollars, a total of only 846 million dollars. **Thus the decline of railroad buying more than offset by a margin of 72 million dollars the effects on the country's business of the increase in residential construction.**

September 23, 1939.—The failure throughout ten years of depression fully to utilize and increase the nation's productive and distributive capacity has been due entirely to economic causes—to economic policies of government, business and labor which have prevented the law of supply and demand from working normally—which have prevented supply, i. e., production, from increasing normally by preventing effective demand from increasing normally.

**Consequently, the United States is today in relatively the worst economic condition to engage in a war than it ever has been in its entire history.** The means of putting it in sound economic condition should be adopted and carried out concurrently with the adoption and execution of the means of putting it in a stronger military condition. **Unless the policies adopted are calculated to solve its economic and military problems concurrently they will not be best adapted to solving either of these classes of problems.**

November 25, 1939.—The recent improvement in business has been so extraordinary that it is causing many to raise questions regarding its causes and whether it will last. . . .

As great as the improvement has been, it has not raised total production and commerce to anywhere near the levels reached during the decade preceding the depression. . . . The way to cause continued expansion of business is to **revive the investment of private capital.** Within the last decade business repeatedly has started improving. . . . The last five years would have been a period of great prosperity if there had not been unprecedented causes of the unprecedented and repeated "recessions" that have since occurred. . . .

How, then, assure full revival of private investment? There is only one way—by affording all private business opportunity to increase its profits on existing investment and by giving private owners of capital confidence that they will be afforded opportunity to derive reasonable interest and dividends from additional investment. . . .

We all want the recent unprecedented improvement in business to continue. . . . It will continue only if government, business and labor act in future in accordance with the economic lessons which . . . this country's economic experience during a century and a half, and especially during the last decade, so plainly teaches.

April 6, 1940.—The New Dealers are obligingly presenting their opponents with an issue for the 1940 national political campaign which, if their opponents will meet it consistently and squarely, can be made to sur-



pass in clarity and availability for public discussion any issue since that of "free silver" in 1896. This issue is that of **permanent federal spending** on a colossal scale **versus expansion of private industry** as a means of providing employment for all employable persons at good wages and of producing the necessities, comforts and luxuries required for a high and improving standard of living for all. . . .

The theory that private enterprise has lost its power of expansion, and that hence huge "government investment" must in future supplement or be substituted for it, has been expounded with ability for some time by Adolph Berle, assistant secretary of state, the last of original brain trusters now in government service. Recently more and more leading New Dealers have been expressing the same view; and it now appears to have been accepted by most or all of them. . . .

To take the people's savings away from them to keep the unemployed and their families from going hungry during a temporary emergency is one thing. To take the people's savings away from them and have them spent by the government as a permanent policy is another matter entirely. . . . **The issue of "public versus private enterprise" is crystal clear.** The evidence available that "government investment" is not an adequate supplement or substitute for private enterprise and investment is conclusive.

June 1, 1940.—There is virtually no opposition to an adequate military program of national defense, whatever it may cost. But . . . **economic preparedness** is as important under modern conditions as **military preparedness.** **The former is the essential foundation of the latter; and the former is vitally important in both peace and war, while the latter is vitally important only in war.** . . . If we adopt sound economic policies we can secure in a short time a much larger increase in production both for maintenance of a high standard of living for our people and for military purposes than was practicable during the last World War. But this increase of production cannot be accomplished without the adoption of sound economic policies that will put all existing plant, all available capital and all available workers to work. . . . And there can be no increase in social benefits and no social progress for the people as a whole, that are not . . . derived from and based on increased production of needed useful things.

July 12, 1940.—There has occurred within the last decade a most significant change in the slogan of the American people. For almost a century and a half that slogan was "Progress"; and virtually all policies of government and business were intended to promote progress. Within recent years it has become "Security"; and most policies . . . have been intended to promote security, regardless of their effect on progress. . . .

Have these policies hindered progress? If so, have they, nevertheless, benefited the masses by increasing their security? . . . **Under the policy of "security" the national income of the American people has averaged 9 billion dollars a year, or \$104 per capita, less during the last seven years than during the preceding seven years,** although the preceding seven years included three years of the depression. . . . Total farm income, in spite of federal government "benefit" payments, has averaged 1 billion 300 million a year less. . . . Total wages and salaries of all workers have averaged 9 billion 400 million less.

July 27, 1940.—. . . Almost certainly the election of Willkie would be followed by a revival of confidence causing beginning of a great expansion, while that of Roosevelt would be another blow to confidence presaging indefinite continuance of a depression that already has lasted ten years—of which **the worst seven con-**

**secutive years of depression in the country's entire history** have been under Mr. Roosevelt's administration. . . .

Mr. Roosevelt is the first President of the United States in 150 years during whose administration in time of peace the total annual income of the American people always has failed to equal the maximum previously reached. In every year of his administration the national income has been from 10 billion to 30 billion less than the maximum reached in 1929, and last year was still 10 billion below it. . . .

**The Railway Age predicts that if Mr. Willkie is elected and this country keeps out of war the income of the American people during Mr. Willkie's first four years will average not less than 90 billion dollars and will increase to more than 100 billion annually—enough of an increase . . . to pay all the increased costs of military preparedness and leave several billion dollars annually to improve the standard of living of the people.**

August 17, 1940.—Throughout the depression the *Railway Age* has maintained that the only way to increase employment and payrolls . . . is to increase production; that the best way to do this is to put more men to work; that advances in wages during a period of depression are more likely to reduce than increase employment and production; and that if necessary to increase employment and production wages should be reduced. . . .

The **only way permanently to increase both employment and wages in the country's industry as a whole** is to increase the gross earnings of industry as a whole; and, in the absence of inflation ruinous to all, the only way to increase the gross earnings of industry as a whole is to increase the production of industry as a whole.

September 21, 1940.—The government "investment" program, as a destroyer of private enterprise and private employment, is more certain and harder to combat than the whole regulatory bombardment combined. It is more certainly lethal because, while business can live after a fashion under harsh regulation and taxation which affects all competitors alike, it cannot live as a taxpayer against competition which is fed by taxes instead of yielding them. The government "investment" device is more dangerous than harsh regulation because it **divides the opposition to socialism—scarcely any government "investment" can be thought of, however unsound in principle, which does not have a large number of business men rooting for it because they see in it an opportunity for immediate profit.** "After me the deluge," as Louis XV said. . . .

It is absolutely necessary, if private enterprise in this country is to be saved, that we have a man in the White House who understands this government **versus** private investment issue.

October 5, 1940.—The principal New Deal argument for the election of President Roosevelt for a third term seems now to be that Roosevelt and Willkie agree on major policies, and that Roosevelt would carry them out better. . . . The most profound and tremendously significant difference between them is that **Roosevelt is a totalitarian and Willkie is a liberal.** . . . The *Railway Age* said in an editorial in its issue of July 6, "The real enemy is **magnified governmental power.**" A totalitarian is one who believes in the concentration of virtually all economic as well as political power in a central government, or even in a single man, and professes to believe this will best promote the welfare of the people, or at least of the classes with whose welfare he is—or professes to be—especially concerned. . . .

A true liberal is one who really believes in liberty; and the accepted meaning of the word "liberty" throughout

the civilized world when the Constitution of the United States was adopted and for a century and a half afterward was freedom from government—all the freedom from government for each person consistent with the equal freedom from it of all other persons.

October 19, 1940.—. . . Our experience during the last seven years—when we have had the most gigantic government spending in all history accompanied by continuance of depression broken only by “recession”—should have taught everybody with the least intelligence that **increase of government spending, unaccompanied by economic policies tending to revive all branches of private enterprise, causes production as a whole to increase less, rather than more, than the increase in government spending.** . . . One fact the statement of which will surprise and shock most persons is that, contrary to most of what is being said, **business as a whole is worse right now than it was a year ago.** . . . In the first 38 weeks of 1940 freight loadings averaged 10 per cent larger than in 1939; but in the two weeks ending with October 5 they were less than in 1939, also less than in 1937 when the “recession” was in full swing. . . .

Since 1936 the country's population has increased about 4 million and its labor force available for employment about 2 million; and according to all experience previous to this depression business should have increased more in proportion than population. Large government spending for public works, relief, etc., has been continued since 1936 and has been supplemented recently by increased spending for defense. Also, the country's industry has received in 1940 huge armament orders from abroad such as it did not receive in 1936 and such as greatly stimulated its business in 1915 and 1916. Yet, in spite of all the war orders, the total volume of business during the first 40 weeks of 1940, as indicated by the best available measure, was almost the same as in 1936!

October 26, 1940.—The record shows (1) that the advance in the average wage of persons employed by the railways has been abnormally small during the last decade of which more than seven years has been under the New Deal; (2) that there has been a wholly unprecedented decline in the average number of persons employed by the railroads—the number in the New Deal years 1933, 1935, 1938 and 1939 having actually been less than in 1932; (3) that during the last decade there has been an entirely unprecedented decline in the annual railway payroll, this decline averaging more than 1 billion dollars a year; (4) that the foregoing developments have been due to railway gross earnings persistently remaining about 2 billion dollars annually less than during the decade ending with 1929; and (5) that each and every one of these developments and conditions has been principally due, directly or indirectly, to policies which the New Deal began adopting in the spring of 1933, when recovery already had commenced, and which it has persisted in following ever since.

\* \* \*



Photo by C. F. H. Allen

This Pittsburg, Shawmut & Northern Pusher is Shown Working at Angelica, N. Y.

## Fire Losses in 1939

**A** TOTAL of 5,602 fires on 189 railroads destroyed \$4,272,296 of property in 1939, according to the report of the Committee on Records and Statistics made at the annual meeting of the Fire Protection and Insurance Section of the Association of American Railroads at Chicago on October 15 and 16. This compares with 4,372 fires and a loss of \$3,820,214 in 1938, when only 67 railroads reported. The average loss per fire in 1939 was \$763, compared with \$874 in 1938 and \$901 for the 21-year average since 1919. Only five fires in 1939 resulted in a loss of more than \$50,000 each. Of these, the largest loss was \$485,636. A total of 5,458 fires resulted in a loss of \$1,532,097 or \$280 per fire.

Of the 5,602 fires in 1939, 1,303 resulted from unknown causes, 777 were started by trespassers, 631 were due to outside exposure and 498 were the result of smoking and matches. A total of 1,811 fires occurred in freight cars, 1,250 in non-fire resisting buildings and 304 in bridges, trestles and culverts.

The value of the fire prevention efforts of members of the section was summarized by Chairman W. F. Hickey, superintendent of insurance of the New York, New Haven & Hartford, who, in his opening remarks said: “The loss of property by fire on railroads has been reduced from a high of over \$12,000,000 per year 15 years ago, to around \$4,000,000 per year now. Still more important, however, has been the resultant reduction in contingent losses which fire creates and which cannot be insured, such as providing temporary facilities, and re-routing and detouring of traffic, loss of revenue to competitors, for all of which there is no reimbursement. Insurance premiums have also been materially reduced during the past 15 years; and, most important of all, the safety and protection of passengers and employees have been greatly improved.

“Modern railroad operation presents many hazards and problems which were unknown a dozen years ago, and it has been necessary to devise new methods for controlling those hazards. While most of the improvements introduced by the railroads, such as air conditioning, Diesel engines, use of lacquer finishes, petroleum products and welding, were all desirable from the public standpoint, they added new problems for the insurance and fire protection departments of the railroads.

“One recent feature that has added to the inequitable burden of some of the railroads is the tremendous liability imposed on them for freight of great value on one car, for example the common carrier liability in some cases as high or higher than a quarter of a million dollars per car, and several times that figure per train. The cost to the railroad for insuring such risks would consume a large portion of the revenue which the railroad receives for handling and hauling the freight. Such high valued shipments, notably airplane motors, should be released to a declared valuation of a reasonable maximum figure (say \$15,000 per car), and the owner of the freight should provide insurance beyond the released value. It is unjust to impose such a tremendous liability on one railroad or one corporation. More equitably it should be spread among dozens of insurance companies by the owners of the freight arranging for insurance beyond the reasonable maximum figure to be assumed by the railroad. In the interest of the shipper, the wisdom of loading such high valued shipments on flat cars is debatable from an insurance standpoint, and it would be also more prudent to divide such large values among two or more cars and trains. The ironical feature of such transactions is that the railroad receives compara-

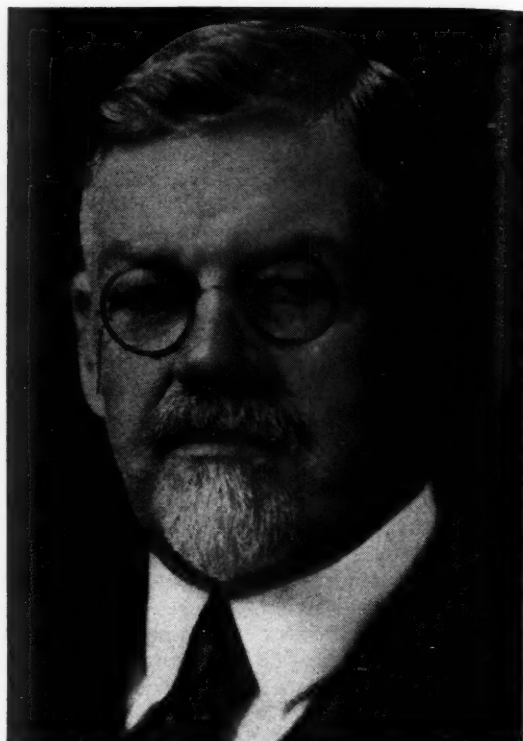
(Continued on page 649)



# William B. Storey

## Dies

Railway career covered 52 years,  
of which 33 were spent with  
the Atchison, Topeka & Santa Fe



William B. Storey

**W**ILLIAM B. STOREY, who retired as president of the Atchison, Topeka & Santa Fe on May 2, 1933, died in Chicago on October 24 at the age of 83 of a heart ailment. Death while he was asleep brought to an end the career of one of the most able railroad leaders of the century. Mr. Storey was born in San Francisco, Cal., November 17, 1857, and graduated from the University of California in 1881 with the degree of Bachelor of Philosophy, although he had pursued studies of use in engineering. Previous to that time he had begun railway service as an axman on the Central Pacific (now part of the Southern Pacific) during his summer vacations. His first position, accepted before graduation was as a rodman on a reconnaissance survey made by the Central Pacific looking for a possible route from Utah to Oregon. Subsequently he served this road as instrumentman and chainman on new line construction in the west and in 1883 was promoted to assistant engineer on construction.

When the engineering force was reduced in 1884, he was without work. "With another engineer," according to his autobiography, "I opened an office in San Francisco under the name of Palmer and Storey. During the time this firm was in existence we built two short lines of railroad, one in Colusa County and one in Monterey County. Mr. Palmer was in charge in the field and I was in the office, but the returns were small and prospects of future work were poor. Therefore, when the Southern Pacific offered me work in 1886 in charge of location and construction of a short line of road in San Joaquin Valley, I accepted and the partnership was dissolved." Mr. Storey served the S. P. in California until 1893 when the panic disrupted construction work.

In 1894 he obtained a position as assistant engineer on the California Debris Commission and in 1895 became chief engineer of the San Francisco & San Joaquin Valley which was organized to build a railroad from San Francisco to the San Joaquin Valley. When this road was turned over to the Atchison, Topeka & Santa

Fe in 1900, Mr. Storey was made chief engineer of the latter's Eastern lines. Because of his extended experience in locating new routes, he was assigned the task in 1903-1904 of investigating possible routes between San Francisco Bay and Eureka, a territory cherished by both the Santa Fe and the Southern Pacific. In July, 1906, he was promoted to chief engineer of the Santa Fe System, with headquarters in Chicago; in 1909 he was elected vice-president in charge of construction; and in 1910 was also given jurisdiction over the operating department.

Mr. Storey served as vice-president until the end of 1917 when he was appointed federal manager of the Santa Fe. On January 1, 1920, he returned to the corporate organization as president, which position he held until May 2, 1933, when he retired. He continued, however, as a member of the board and of the executive committee.

From 1896 to 1933, only two men occupied the presidency of the Santa Fe. The first of these men was the late E. P. Ripley, to whom the greater part of the rehabilitation of the Santa Fe since 1896 is credited. The other is Mr. Storey, who succeeded Mr. Ripley in the presidency of the road after playing an important part for years in carrying out the Ripley policies, and who brought to successful conclusion the program of improvement and development laid down by his predecessor.

As president of the Santa Fe, Mr. Storey pursued a policy of steady expansion into new traffic-producing territory and of constant physical improvement of the property. More than 2,000 miles of lines were added to the system between 1918 and 1932, most of it in the fast-developing sections of the Southwest. The Kansas City, Mexico & Orient, which was acquired in 1929, added a new feeder line to a railway which has been most notable for its characteristics as a strong trunk line with many strategically-located feeders. Improvements to the Santa Fe property were made on a system-

wide scale, including many miles of second main tracks, grade reduction, the purchase of modern equipment and the construction of new buildings and structures of many kinds, so that from a physical and an operating standpoint, the Santa Fe would not suffer by comparison with any other railway in the country.

In 1919, the year before Mr. Storey became president, the combined federal and corporate operating revenues were \$209,500,004 and the net federal and corporate income was \$37,159,508. By 1929 its operating revenues had increased to \$267,189,178 and its net corporate income to \$61,036,804. Dividends on the common stock were increased from 6 to 7 per cent in 1925 and to 10 per cent in 1927.

## New Vertical Wheel Hand Brake Developed

**T**HE Champion Brake Corporation has developed a vertical wheel hand brake, called the Micro-Matic safety hand brake, which is operated entirely by the hand wheel. It is being distributed by the Standard Car Sales Company, Inc., Chicago.

After being set, the brakeman effects a reduction in brake shoe pressure simply by turning the hand wheel in the reverse direction, thus reducing the braking effort as much as desired. Additional pressure on the brake shoes can again be secured at any time by turning the handle in a clockwise direction, thus making sure that

the brakeman will have accurate control of the braking effort at all times. The handle wheel remains at whatever position it is turned to, regardless of the brake pressure applied, an important safety factor.

The brake is fast in action, requiring only two and one-half revolutions of the hand wheel to take up the slack and one-half revolution in addition to set the brake from full release position. There are no control levers to operate, eliminating any reason for the brakeman to let go his hold on the car, so this may be accurately referred to as a "one-hand" hand brake.

The brake is ruggedly constructed with relatively few parts, and is equipped like other Champion brakes which have been in service many years, with Oilite bearings having sealed-in-life-time lubrication.

The rim of the hand wheel has a hand grip designed to give a greater purchase for final application of power. It also provides a convenient grip for releasing the unit. The housing is constructed so that the inspection of parts can be easily made by removal of only two small cover bolts.

In running tests, the new hand brake is said to have given easy, quick and safe control of car speed.

## Eight Months Purchases Show Gains Over 1939

**A**PPROXIMATELY \$98,714,000 of materials, equipment and fuel were purchased by the Class I railroads in August, according to the latest compilations of the *Railway Age*. This was an increase of 8 per cent over July, a gain of 23 per cent over June and a gain of 31 per cent over May, when purchases were the lowest this year, and reflects the largest volume of buying in the aggregate in any month since March, 1937, with the exception of September and October, 1939, when the totals were \$112,625,000 and \$128,361,-

Railway Purchases—Materials and Equipment—Eight Months

	Materials received from mfrs. (000)	Equipment ordered from mfrs. (000)	Total from mfrs. (000)	Fuel (000)	Total including fuel (000)
1929 .....	\$647,701	\$269,522	\$917,223	\$226,399	\$1,143,622
1930 .....	548,446	125,847	674,293	209,954	884,247
1931 .....	341,864	23,642	365,506	164,136	529,642
1932 .....	187,700	2,049	189,749	118,000	307,749
1933 .....	169,599	3,810	173,409	116,940	290,349
1934 .....	287,590	57,484	345,074	138,065	483,139
1935 .....	243,340	23,143	266,483	156,210	422,693
1936 .....	348,218	105,992	454,210	168,326	622,536
1937 .....	497,476	163,388	660,864	188,695	849,559
1938 .....	222,920	33,669	256,589	153,151	409,740
1939 .....	316,844	57,123	373,967	163,290	537,257
1940* .....	393,652	100,814	494,466	175,349	669,815

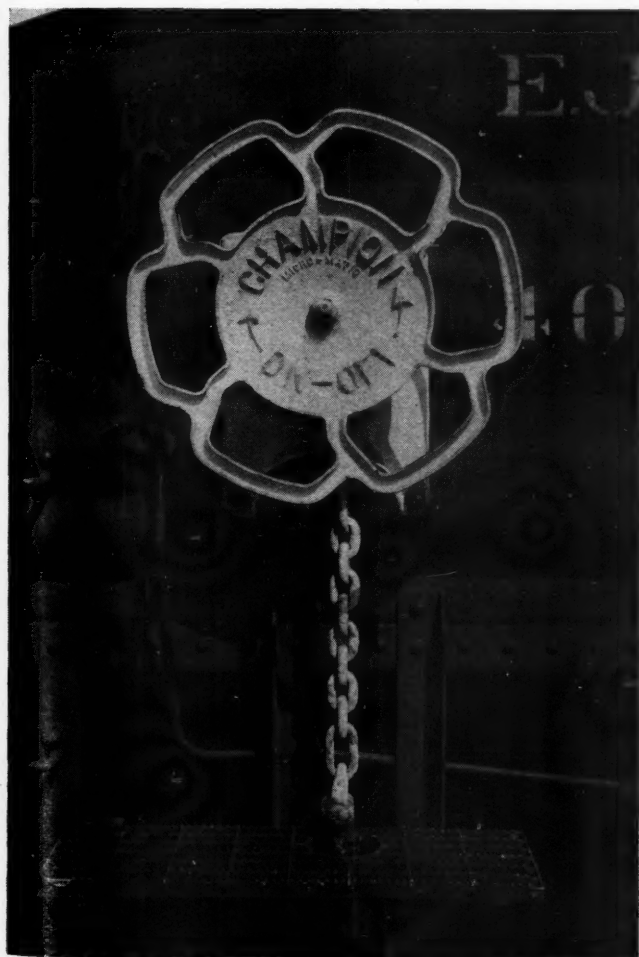
\* Subject to revision.

000, respectively. The August, 1940, total was 50 per cent greater than in August 1937, 98 per cent greater than in August, 1938, and 50 per cent greater than in August, 1939.

Aggregate purchases for the first eight months of 1940 amounted to \$669,815,000. This was 24 per cent greater than in the first eight months of 1939 and 63 per cent greater than in the first eight months of 1938, but 21 per cent smaller than in the first eight months of 1937.

### \$495,000,000 from Manufacturers

The eight months total included approximately \$100,-814,000 of new locomotives and cars ordered from builders and \$393,652,000 of materials, exclusive of fuel, re-



Champion Micro-Matic Safety Hand Brake Applied to Hopper Car



ceived from manufacturers—a total of \$494,466,000 of materials and equipment, exclusive of fuel, from manufacturers, while \$175,349,000 was expended for fuel. Purchases of equipment and materials, exclusive of fuel, from manufacturers were 32 per cent greater than in the corresponding period of 1939 and 93 per cent greater than in the corresponding period of 1938 although 25 per cent less than in the same period of 1937. The

#### Railway Purchases—Materials and Supplies

	Fuel (000)	Rail (000)	Cross- ties (000)	Other Material (000)	Total (000)	Total less fuel (000)
1939						
January .....	\$23,377	\$483	\$2,445	\$27,374	\$53,679	\$30,302
February .....	23,063	2,934	2,632	26,721	55,350	32,287
March .....	24,361	4,631	3,660	33,467	66,119	41,758
April .....	17,833	5,370	3,297	33,842	60,342	42,509
May .....	16,925	6,569	3,697	35,651	62,842	45,917
June .....	17,783	5,893	3,742	33,956	61,374	43,591
July .....	19,502	2,293	3,157	33,749	58,701	39,199
August .....	20,446	2,761	3,779	34,741	61,727	41,281
8 Mos. ....	163,290	30,934	26,409	259,501	480,134	316,844
1940						
January .....	24,628	3,282	4,299	45,879	78,088	53,460
February .....	23,879	4,478	4,091	40,189	72,637	48,758
March .....	21,574	5,619	4,826	42,923	74,942	53,368
April .....	21,273	6,017	4,774	39,655	71,719	50,446
May .....	21,545	4,668	4,987	37,355	68,555	47,010
June .....	19,879	4,670	4,838	34,726	64,113	44,234
July .....	20,582	4,251	4,471	39,694	68,998	48,416
August .....	21,989	2,082	4,108	41,770	69,949	47,960
8 Mos. ....	175,349	35,067	36,394	322,191	569,001	393,652

equipment ordered from manufacturers excludes approximately \$30,446,000 of new locomotives and cars ordered from builders in September. Materials received during the first eight months of 1940 included \$35,067,000 of delivered rail as compared with \$30,934,000 in the first eight months of 1939 and \$36,394,000 of cross ties as compared with \$26,409,000 in the first eight months of 1939; while \$322,191,000 of car and locomotive and other miscellaneous materials were purchased, as compared with \$359,501,000 in the corresponding period of 1939.

#### Slightly Lower Inventories

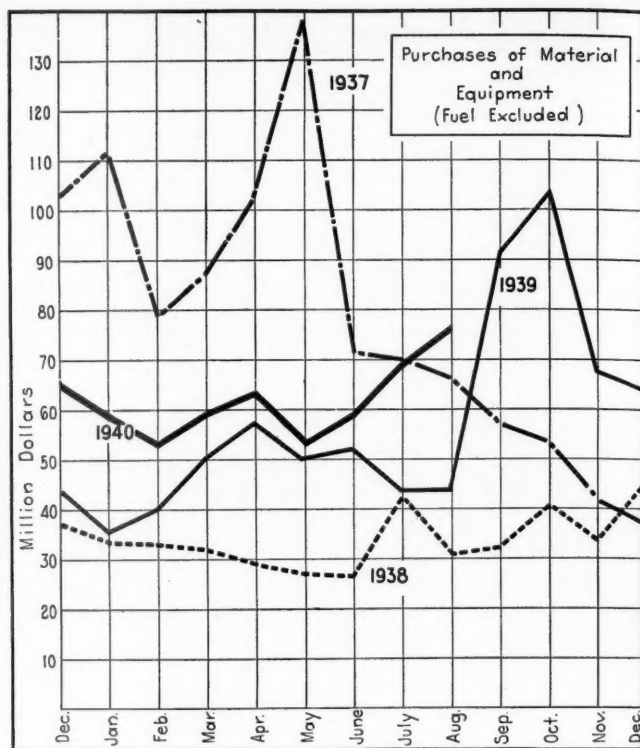
The value of unapplied materials in stock on September 1, totaling approximately \$340,927,000 in the aggregate, as estimated from the reports received from rail-

#### Materials in Stock—Class I Railroads

	Fuel (000)	Rail New and S. H. (000)	Cross- ties (000)	Stores stock (000)	Scrap (000)	Total (000)
1939						
Jan. 1 .....	\$22,660	\$24,733	\$59,491	\$199,477	\$11,200	\$317,561
Feb. 1 .....	25,594	24,691	61,796	196,330	10,393	318,804
Mar. 1 .....	27,100	26,229	63,346	196,669	10,239	323,583
Apr. 1 .....	29,445	27,695	65,246	197,383	10,686	330,455
May 1 .....	24,101	28,459	60,749	203,806	11,217	328,332
June 1 .....	21,048	29,345	57,067	205,169	11,548	324,177
July 1 .....	18,732	30,520	52,809	205,027	11,761	318,849
Aug. 1 .....	20,175	30,026	52,158	197,960	12,023	312,342
Sept. 1 .....	21,165	29,137	51,375	194,802	12,384	308,863
1940						
Jan. 1 .....	21,778	25,552	51,359	216,996	11,551	327,236
Feb. 1 .....	22,454	28,213	58,187	222,127	11,862	342,843
Mar. 1 .....	23,190	31,546	60,615	230,045	11,576	356,972
Apr. 1 .....	21,016	34,388	64,466	234,899	11,509	366,278
May 1 .....	21,343	35,826	63,945	234,866	11,551	367,531
June 1 .....	22,419	34,818	60,070	231,308	11,275	359,890
July 1 .....	22,310	35,138	57,452	225,066	11,371	351,337
Aug. 1 .....	24,065	34,134	55,988	222,001	11,326	347,514
Sept. 1* .....	25,806	31,846	55,652	216,288	11,335	340,927

\* Subject to revision.

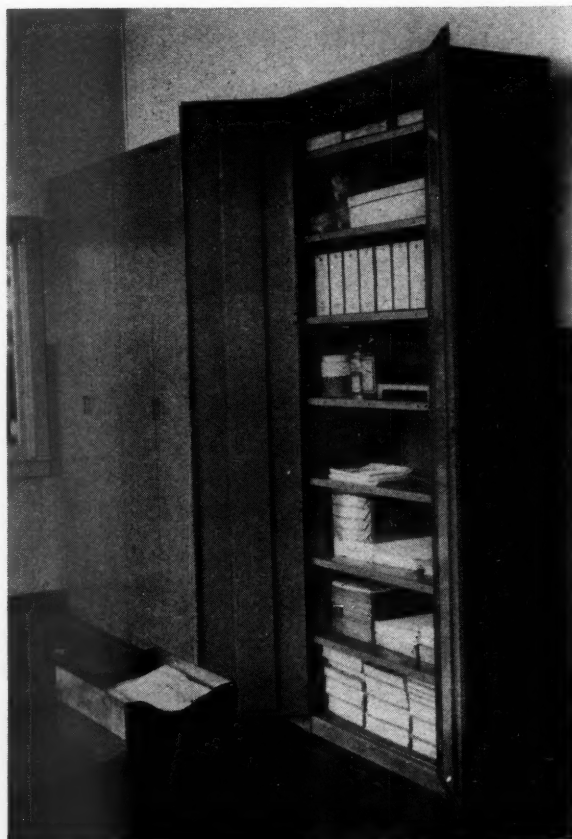
roads up to the time this was written, was smaller than in any of the previous eight months and 7 per cent lower than on April 1 but was larger by \$32,064,000, or 10 per cent than on September 1, 1939. The inventory of new and second hand rail, amounting to \$31,846,000 on September 1, was the lowest in seven months but 9 per cent larger than on September 1, 1939. The cross tie stock on September 1, totaling \$55,652,000, was approximately 8 per cent above the corresponding inventory



Month to Month trend of Railway Purchases

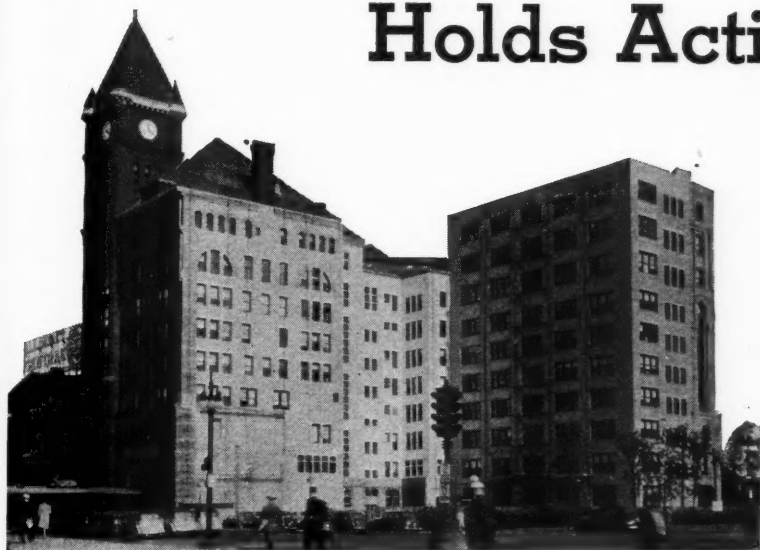
on September 1, 1939, while the inventory of miscellaneous materials, amounting to \$216,288,000 on September 1, reflected a decline of approximately 7 per cent from the peak on April 1 and was lower than in any other month this year, although reflecting an increase of \$21,486,000, or 12 per cent, over September 1, 1939.

\* \* \*



Fire Proof Cabinet for Station Supplies

# Bridge and Building Association Holds Active Convention



Recent Steam Cleaning of the Illinois Central Station at Chicago. Only Partially Completed as Shown in This View. Brought About a Striking Change in Appearance

Abstracts of an address and five additional committee reports presented before the forty-seventh annual meeting in Chicago on October 15-17

## Part II

**S**UPPLEMENTING the running report of the forty-seventh annual convention of the American Railway Bridge and Building Association that appeared in the *Railway Age* of October 26, together with abstracts of two addresses and three committee reports, there follow excerpts of the five remaining committee reports and of an address by H. R. Duncan, superintendent of timber preservation, Chicago, Burlington & Quincy, on Co-Operating With the Purchasing and Stores Department in Protecting Bridge and Building Requirements. The committee reports embrace The Repair and Renewal of Ballasted-Deck Bridges; The Inspection of Buildings to Formulate the Maintenance Program; Protecting Steel Structures From Severe Corrosion; The Detection and Elimination of Termites in Railway Structures; and The Storage and Delivery of Bridge and Building Materials.

### Co-Operating with the P. & S. Dept. in Protecting B. & B. Requirements

By H. R. Duncan\*

In the proper handling of bridge and building department materials and supplies, there must, of course, be co-operation both ways between the bridge and building department and the purchasing and stores department, and that is how we try to operate on the Burlington. In developing figures of the material requirements on our property, the bridge engineer secures estimates from the division officers about two years in advance, in the case of piling and lumber. These estimates, of course, cannot be accurate, but they are the best that any one on the railroad has of what we are going to need. This information is given to the purchasing and stores department in order that it can prepare orders, secure the material, season, frame and treat it, and have it ready for shipment prior to the time when it is actually needed.

Each year, usually during the months of September,

October and November, our bridge engineer, with a party of officers and assistants, makes an inspection of all bridges on the railroad. At this time, he details definitely what each bridge needs, and when he has finished his inspection, he gives us a statement of what his material requirements are going to be for the following year. Thus, we get two estimates—one, a preliminary estimate, about a year and a half or two years ahead of actual requirements, and then a very definite estimate, usually about the first of the year. Prior to the receipt of the definite estimate, we have purchased much of the material required. After the bridge program has been developed and approved, the bridge engineer prepares requisitions for each job. These are given to the stores department, making a definite commitment, and we then proceed to get the material ready, but we do not ship it until we receive definite instructions.

We usually receive practically all requisitions by shortly after the first of the year. The bridge engineer keeps in touch with the field forces over the railroad, gets reports from each pile-driver crew, knows definitely what progress is being made on each job, and shortly before the material is actually needed, he notifies us that he wants the material at a certain point on a certain day. When he has done this, he has finished his part of the job of cooperation, and ours begins. Then it is up to the stores department to have the material on the job by the time specified. As the result of our effort to co-operate with the bridge and building forces, I am sure that our performance in getting materials to these jobs when needed is very good. We know very definitely that when we get a requisition from our bridge engineer and he says that he wants certain material on a certain date, that he really wants it. Therefore, we put forth every effort to get it there.

There are those in some departments on the railroad who are not as considerate and precise as our bridge department. To them, every job is a rush job; they want everything shipped right away. It is needless for me to say that these men do not get the attention and consideration that the man does who plans his work and tells us what he wants so that we can be prepared.

\* Superintendent of Timber Preservation, Chicago, Burlington & Quincy, Galesburg, Ill.



I cannot say enough for the way our bridge department plans its work.

There is another important question in the relationship between the bridge department and the purchasing and stores department, and that is the handling of emergency stocks. We have small emergency stocks at each terminal, far smaller than are found on many railroads. Our bridge engineer has figured out quite carefully the minimum amount that he can get along with at each point. We do, however, have large stocks—not emergency, but regular stocks—at our treating plants at Galesburg, Ill., and at Sheridan, Wyo. When a sizable emergency arises, these plants are notified and proceed to load up a lot of material promptly.

I was on a trip in the West a few years ago when a large part of our railroad was washed out. When I reached home, I found that on the first day we had loaded something like 65 cars of piling out of storage. Two days later, we were still loading, in spite of the fact that loading had been continuous day and night.

Another thing that the stores department does when we have a serious disaster on our road, and we have had a couple such disasters during the last 15 years, is to send men from our organization out on the job. We don't wait until they call on us and tell us what they want. The men stay on the job, and thus avoid a lot of red tape.

The bridge department tells us what it wants and when it should be there, and, if necessary we run material out in passenger trains. We have actually moved piling from Chicago to Thermopolis, Wyo., in less time than you can go on a passenger train.

## Repair and Renewal of Ballasted-Deck Bridges

Properly constructed ballasted-deck bridges being built today will give a service life of at least 50 years, according to a committee of which W. A. Sweet, general foreman bridges and buildings, Atchison, Topeka & Santa Fe, was chairman, which reported upon the repair and renewal of ballasted-deck bridges. The report dealt primarily with ballasted-deck pile trestles, which, the committee said, have proven very satisfactory, both because of their low maintenance cost and because of the improved riding qualities which they afford. However, it cautioned that such bridges, even if fully treated with creosote oil, require regular inspections to insure against broken timbers and fire hazards, and to see that bents are not weakened by scour from flood-waters. After about 15 or 20 years, it said, it is well to determine the condition of the timber by sounding. If sounding indicates that a timber is more or less hollow, a thorough investigation should be made with an auger or increment borer to determine its true condition accurately. It expressed the belief, however, that under usual conditions, a complete boring test of all timbers will not be necessary until the structure is about 30 years old.

Turning to ballasted decks of other than timber construction, the committee discussed the problems encountered with concrete ballasted decks on steel spans, steel-plate ballasted decks, and the use of wrought iron plates for deck construction. Concerning steel-plate ballasted decks, it pointed out that these ordinarily do not require attention or inspection for serious corrosion until 25 to 30 years after installation. However, it said that the necessity for the water tightness of these decks may require inspection and repair at a much earlier date. Wrought iron deck plates, it pointed out, are being installed by some roads with the expectation that a longer

service life will result from this material than is obtainable from steel.

On the matter of repair versus renewal, the committee emphasized that a structure should be carried with repairs just as far as such repairs can be justified economically and consistent with safety. In this connection, however, it pointed out that the location of the structure and the traffic which it carries are factors which must govern the situation to a large extent.

Citing examples to show that, more frequently than not, the renewal of ballasted-deck pile trestles has been caused by the condition of the substructure rather than the condition of the deck, the committee stressed the importance of keeping the substructure safe until the longest possible life has been obtained from the superstructure. It said that it seems to be generally agreed that treated material, either new or good second-hand, should be used in repair work, except perhaps in repairs of a temporary nature, pending complete renewal of the structure within the near future. As to when complete renewal should be undertaken, the committee said that while decay in the timber is the most frequent determining reason, consideration should be given to the necessity for a structure of higher rating, and to the cost of extensive repairs as compared with that of a new bridge.

In another part of its report, the committee discussed in detail methods of renewing ballasted decks, and also drainage, and then dealt at length on the caution advisable in making excessive ballast lifts on these types of decks, without giving due consideration to the effect of the increased dead load of the additional ballast upon the various bridge members. In this latter regard it presented an example which showed that the addition of 12 in. of ballast on a specific structure which already had 14 in. of ballast below the base of rail, produced stresses in the stringers and piles that approached their stress limits. The proper solution for the raise of ballast, it said, seems to be to limit the increased depth to not more than 12 in. If there is need for an additional raise of the grade over the bridge, it continued, the additional raise can be secured by providing shims or false caps at the bents, a procedure which will not put additional overload on the bridge.

### Discussion

In the discussion following this report, the problem of strengthening ballasted-deck bridges without removing the deck, by adding an extra member fastened to the bottom of each stringer, was considered; as were also methods of providing deck anchorage without drift bolts, in the interest of economy and minimum interference with train operation during renewal operations. It appeared to be the consensus that slow orders are necessary for short periods of time when renewing ballasted-deck bridges, although examples were cited of the decks of small bridges being renewed between trains.

## The Inspection of Buildings to Formulate the Maintenance Program

In a comprehensive report, a committee of which L. E. Peyser, assistant architect, Southern Pacific, Pacific Lines was chairman, reviewed with some concern the status of building maintenance on the railways and pointed out that this situation gave emphasis to the importance of adequate periodic inspections in the interest of programming future work in the order of its importance and to secure the most effective results for the money expended. Concerning the situation which exists

with respect to building inspection and maintenance, the committee said, in part:

"During the last 10 years, with their curtailed maintenance allowances, it has been necessary for the railways to concentrate on the inspection of bridges, trestles and culverts to avoid interfering with the operation of trains, either from the standpoint of safety or slow orders. The inspection and consequent repair of buildings has, therefore, been curtailed to a great extent with the thought in mind that this is one place where maintenance expenditures can be cut down.

"It must not be overlooked, however, that even when reduced to the lowest possible level, the maintenance of buildings comprises a major expenditure and is, therefore, entitled to the same thorough study as other items on the maintenance program. Such study cannot be made properly and a budget program formulated without the actual inspection of buildings to gain some idea of the work that must be performed and the amount of money that will be required to permit the proper and orderly formulation of the field work. The preparation of a program based upon careful inspection should provide the greatest improvement in the largest number of buildings with the least possible expenditure."

The work of inspecting buildings, the committee emphasized, calls for a thorough knowledge of building construction and the exercise of good judgment. It is not unusual, it said, to find that defective details, which on cursory inspection appear to be of great importance, are shown, on more careful investigation, to be non-fundamental, while many defects that appear unimportant may in reality not affect one part alone, but the useful life of the entire structure.

The committee placed the responsibility for adequate building inspection upon the division bridge and building supervisor or master carpenter, but it recommended that a competent person from the general office, representing the department most interested in developing the maintenance program, participate in all program inspections in order to assist in the development of a program for the work. It pointed out that it is not essential that this representative inspect every building each year, although it felt that this is desirable. It did feel, however, that the larger and most important buildings should receive his attention each year, if possible, and that all buildings should be inspected at least every two or three years. Along with the division and general office representatives making inspections, the committee felt that a representative of the fire prevention department could be of great assistance, especially by pointing out desirable fire prevention needs, which, if incorporated as a part of the work program, could be done most economically.

Particularly in view of the restricted earnings of the railways, the committee stressed the need on the part of building inspectors to classify properly the work necessary in the order of its importance, giving preference to fundamental features in the interest of safety and future economy, and overlooking the matter of appearance unless that is an important consideration. Summarizing in the order of their importance the basic factors upon which recommendations for building work should be based, the committee listed safety, protection of structural parts, changes to improve the efficiency of occupants, protection of contents, and appearance and comfort. In conclusion, it discussed the order of preference in carrying out work, timing of the work, and methods of making inspection records. It laid particular emphasis on the latter point, "to the end that important work will not be overlooked and can be scheduled in an orderly program."

The discussion centered on the proper frequency of building inspections and how they should be conducted,

some members being of the opinion that such inspections should be made more frequent than every two years as suggested in the report, and that the division officers of all interested departments should be present. Other points brought out were the possibility, as the result of changed operating conditions, of eliminating unnecessary structures, and the importance of inspecting foundation sills and other important parts of structures not readily accessible.

## Protecting Steel Structures from Severe Corrosion

The report on Protecting Steel Structures from Severe Corrosion, which was prepared by a committee of which A. M. Knowles, assistant engineer structures, Erie, was chairman, was divided essentially into two parts, the first part dealing at length with the chemistry of corrosion and the fundamental factors involved, especially that corrosion due to atmospheric conditions, sulphuric acid and salt brine, and the second part dealing with the causes of the corrosion of railway structures and the various measures of protection which are being taken.

Railway structures subject to corrosion, according to the committee, include practically every type involving steel, with the major damage being done to bridges, smoke stacks and ducts at power houses, water tanks, train sheds, steel sash, signal bridges, turntables, steel coal pockets, track coal and ash hopper beams, track scales, and various other terminal facilities where steel members are subjected to gases, cinders, dust, dirt and moisture. The effect of corrosion on all of these structures, the committee said, is ultimately the same—namely, a reduction in section, causing weakness and possible ultimate failure.

On the basis of previous studies of the subject and information which it compiled, the committee listed the following as the major causes of severe corrosion, in the order of their importance as destructive influences on the railway structures: (1) Brine and urine drippings from cars; (2) gas, smoke and cinders emitted from locomotives; (3) coal, cinders, debris and dirty ballast, accompanied by moisture; (4) salt water or fogs, and salt water spray; (5) dampness in unventilated places where sunlight is excluded; (6) ordinary water; and (7) ordinary atmosphere.

With regard to the serious damage caused by brine drippings and attempts to minimize the source of this trouble, the committee said, in part as follows:

"Brine results from the use of salt and water ice in refrigerator service. Some cars are equipped with brine-retaining tanks which are supposed to be drained at designated places. Unfortunately, this equipment becomes defective and, until repaired, permits the brine to drop while in transit. Many refrigerator cars are equipped with ice bunkers from which the water is free to drip at will. Salt, while not always used in these bunkers, is necessarily used in thousands of cars and constitutes the greatest menace to steel bridges."

The committee said that consideration has been given at various times to the possibility of equipping all refrigerator cars with brine tanks, but reported that the Association of American Railroads has found this to be uneconomical, first, because only a small percentage of the refrigerator cars in daily operation are treated with ice and salt, and second, because the added weight of the containers, as well as their cost, is quite objectionable from an operating standpoint. In view of this, the committee saw little relief from the attack of brine on bridge structures, and said further, that as long as coal-burning steam locomotives are in service, there appears little pos-



sibility of eliminating the second greatest source of corrosion—that due to smoke gases and cinder blast.

In the remainder of its report, the committee discussed at length the various types of protective coatings available and their application, and then offered the following conclusions:

"The protection of steel railroad structures against severe corrosion is one of the maintenance problems which requires constant, painstaking attention. This includes the selection, the application and the care of protective coatings. No matter how suitably formulated the materials may be to prevent a specific type of corrosion, their effectiveness depends largely upon their application in a proper manner, to suitably-prepared surfaces, at the right time.

"Reports from many railroads indicate that the degree of attention given to structures varies over the country. Where corrosion is not excessive, or is not allowed to become acute before it is given attention, no serious harm results. Where neglect or inattention has permitted serious inroads on vital parts, expensive structural repairs or renewals are often necessary.

"Some railroads continue to use dry-film paint on parts of steelwork attacked by brine and gas with reasonable success, while others have poor success with such coatings. The use of non-drying coatings is apparently gaining favor at present for parts affected by brine. Only time will tell how satisfactory any of these materials will prove to be. There is evidence that a real effort is being made by maintenance officers and their subordinates to find the best possible solution."

#### Discussion

It was brought out that many roads have used oil coatings on steel bridges with satisfactory results and that one road is also using a chemically-treated grease with good results. On this one road, in cases where oil could not be applied, the flame-cleaning and descaling process has been used, followed by painting. One member was of the opinion that protective coatings of lead and oil paints, with a final coat of graphite or carbon black, leave the surfaces in better condition for repainting at a subsequent date, but added that at locations where paint coatings cannot be expected to last five years, his road uses protective coatings of the non-drying type. Other parts of the discussion dealt with the desirability of providing cat-walks on large bridges to permit making inspections safely, especially if the bridges are to be painted with non-drying paints.

### Detection and Elimination of Termites in Railway Structures

Damage to timber railway structures by termites, large as the threat is, can be prevented by proper construction, according to the report of a committee on the Detection and Elimination of Termites in Railway Structures, of which T. H. Strate, division engineer, Chicago, Milwaukee, St. Paul & Pacific, was chairman. However, the committee did not minimize the seriousness of the termite menace, pointing out that these insects live and carry on their destructive work in practically every state in the country, and that all types of wood structures are subject to attack.

At the outset of its report, the committee described the two types of termites—the subterranean termite and the dry-wood termite—their habits and the character of the destruction that they do. With regard to the subterranean type, which it pointed out are the more prevalent

throughout the country and more destructive in their attacks, the committee said, in part as follows:

"Certain conditions are necessary for the existence of termites, namely, dampness and darkness, and the fact that they do their work under cover makes their detection all the more difficult and often allows them to do considerable damage before being detected. Subterranean termites get into a building only from the soil. In other words, there must be some approach from the ground into the building. They cannot start their operations by coming into a building through open doors or windows. As long as they can have access to the wood subject to their attack, their activities continue until the interior of the wood is practically removed, so that what appears to be a sound piece of timber may be only a mere shell. This may create a very hazardous condition."

To show the seriousness of the termite problem, the committee said that it is estimated that these insects do from \$40,000,000 to \$50,000,000 worth of damage annually in the United States, to buildings, fences, poles, books, clothing, leather goods, etc. It stressed the point, however, that little anxiety need be felt with regard to destruction by termites if proper precautions are taken in the use of wood, and if methods of construction are followed which will prevent access of the insects into buildings. In short, it said that all termite damage to man-made structures can be laid primarily to improper construction.

Turning to features of design which should be incorporated in buildings to prevent termite attack, the committee quoted at some length from a discussion of this subject by Dr. Hermann Von Schrenk, consulting timber engineer, presented in the 1934 Proceedings of the American Wood Preservers' Association. Among the recommendations made in this discussion were the following:

Use only cement mortar in the construction of foundation walls. Carry such walls sufficiently high above the ground to prevent the contact of any woodwork with the ground. Provide all foundation walls with approved copper or other long-lived metal shields. Coat the top surface of foundation walls with a rich cement mortar, carefully troweled. Cover the faces of all openings for cellar windows, cellar doors or other openings through foundation walls with rich cement mortar. Concrete slabs should have a triangular depression where they join vertical walls or where adjacent slabs abut against each other, and these should be sealed with a fairly plastic coal-tar pitch. Wherever there is an unexcavated section under a building, a thin concrete floor should be laid on the soil, if possible, with coal-tar pitch seals between sections of slabs and at the walls to prevent the entrance of termites by means of vertical tubes. In cellars, lay the concrete first, and put any boards or posts on top of the concrete. Provide all pipes entering a building with copper shields near the point of entrance. Where wood must come in contact with the ground or where it is located close to the ground, use only treated lumber. When possible, cover the outside of the foundation walls with a good quality of coal-tar pitch.

#### Discussion

The discussion of this report dealt largely with the treatment of the soil about foundations to keep termites out of buildings. It was brought out that it is dangerous to use Orthodichlorobenzene in full strength; that the value of copper sulphate is questionable; and that creosote-petroleum oil mixtures have proved effective. Caution was recommended in the handling of certain compounds, and in the use of creosote-treated lumber in buildings where it might contaminate commodities held

in storage. It appeared to be the consensus that the only sure way to keep termites out of buildings is to use treated timber and lumber in their construction, in at least all parts that might be subject to attack.

## The Storage and Delivery of Bridge and Building Materials

The report on this subject, which was prepared by a committee of which R. E. Caudle, assistant engineer structures, Gulf Coast Lines, Missouri Pacific, was chairman, was an exhaustive treatise dealing with the practices surrounding the storage and delivery of bridge and building materials on the various railways of the country, based largely upon answers received from maintenance officers on 65 roads in the United States and Canada, and from the general storekeepers on 24 roads. To indicate the magnitude of the problem involved in the handling of bridge and building materials used by the railways of the country, the committee pointed out that in 1930, the disbursements for bridge and building purposes on the 19 roads from which it had reports, with a total of 88,000 miles of lines, were \$12,500,000. The average stocks of these roads were valued at \$7,100,000, or 56.8 per cent of the disbursements. It showed that from 1930 to 1939 the average stocks on these roads decreased 28.9 per cent, while the annual disbursements decreased 26.2 per cent, and said that if these roads were representative of all of the railways in the United States, average bridge and building stocks would be valued at approximately \$14,325,000, with annual disbursements of approximately \$26,175,000.

Commenting upon the large responsibility of both stores department and maintenance department officers in the control and handling of materials of such large value, the committee said, in part as follows:

"Funds that are tied up in materials held in storage in excess of an amount sufficient to meet requirements promptly, plus a reasonable surplus to meet emergencies that cannot be anticipated, is dead money, entirely out of circulation. On the other hand, any increased expenditures for labor as the result of not receiving materials when needed is a wanton waste. Therefore, to eliminate as much of the dead money and wanton waste as possible, it becomes obligatory on the part of bridge and building departments to be consistent in the compilation of material requirements and to keep the stores departments fully advised as to dates for delivery, sufficiently in advance to permit the assembly of the materials. When this has been done, the responsibility for meeting the demand rests upon the stores departments.

"It is obvious," it continued, "that if the bridge and building departments of the railways would adopt a plan of making conservative estimates of material requirements on an annual basis and then divide them into halves or quarters; also prepare work programs indicating the half or quarter of the year in which the larger improvement and repair jobs are to be done, and furnish this information to the stores departments some time prior to the first of the year, thereby permitting a spread of purchases over a longer period, a considerable amount of the frozen funds invested in average stocks held in storage could be thawed out without creating any waste in bridge and building department work because of the delayed delivery of materials."

From the information which it received from stores department officers, it was evident to the committee that many of these officers view the annual forecasts of mate-

rial requirements furnished them by the maintenance department with more or less suspicion, and feel that these forecasts cannot be entirely depended upon to reflect annual requirements. As the result, it said that many of these officers, in purchasing the anticipated annual requirements of their roads, review the stock books for several previous years as to the probable requirements, and use an average figure thus obtained, rather than being guided by the forecasts furnished. The committee condemned this practice and pointed out by example that its adoption in the case of bridge and building materials could result in a most serious excess stock of materials in one year and an embarrassing shortage in another. Conservative annual forecasts, it said, divided into six, four or three months, supplemented with a work program indicating in which period of the year the larger renewal and replacement projects are expected to be undertaken, should completely solve this problem by furnishing the stores department a much more accurate estimate of requirements than it is able to obtain by consulting the "stock book" for previous years.

Commenting upon points of frequent grievance between the stores and maintenance departments, and ways in which these departments, as well as the operating departments can work together more effectively in the handling of materials, the committee said, in part as follows:

"Any habitual storage or delay in the delivery of standard stock items of maintenance materials, either at general or outlying stores, could, no doubt, be overcome in large measure if the party who is being inconvenienced would handle the matter for correction through the proper channel with the general storekeeper. On the other hand, excess and slow-moving items at these points can, perhaps, be eliminated entirely by the annoyed party, if it will pursue a course along the proper route to finally reach the chief maintenance engineer.

"The delivery of materials by the stores departments to the sites where they are to be used is a most important matter. It requires constant vigilance by this department, the maintenance department and the operating department. If requisitions indicate the date when the material should be delivered at the site, the stores department will be in a position to request cars for loading sufficiently in advance of the delivery date to insure cars being furnished. When cars are loaded and way-billed, the stores departments can assist the maintenance department in being ready to unload them by giving it early notice of shipment. Likewise, the operating department can be of material assistance in the prompt unloading and release of cars by notifying the division bridge and building supervisor when cars will be at the site.

Supervisors, in turn, can render much assistance by notifying the operating department promptly when each car is unloaded."

### Discussion

The discussion brought out that bridge and building programs should be as nearly uniform as practicable from year to year, since this will permit better maintenance of the structures and at the same time assist the stores department in procuring the necessary materials. J. S. Gabriel (D. & R. G. W.) called attention to the fact that unused or unusable material held in stock is a liability rather than an asset and pointed out that the cost of carrying material in stores department stocks amounts to about 18 per cent of the value of the material and that if material stocks can be reduced, the money value of the stock reduction is always earning 18 per cent.



# Car Men Promote Progress

Higher executive officers pay tribute to car department achievements and stress need for further intensive efforts

**A**T the four-day annual meeting of the Car Department Officers' Association, held October 22 to 25, inclusive, at the Hotel Sherman, Chicago, J. M. Symes, general manager, Western Lines, Pennsylvania, said that car department forces have been an important factor in past improvements in railway service and will also contribute in no small measure to future improvements. O. A. Garber, chief mechanical officer, Missouri Pacific, said that improved methods in the maintenance of freight and passenger cars are required to an ever-increasing degree in rail transportation and that the only way in which the Car Department Officers' Association can justify its continued existence is by assisting in the development of more efficient and dependable methods and practices. D. S. Ellis, chief mechanical officer, Chesapeake & Ohio, said that on car department forces falls the major responsibility for meeting the most difficult problem which confronts the railroads, namely, to supply shippers with the many different kinds of freight cars they now demand, in satisfactory condition to carry loads safely to destination. D. J. Sheehan, superintendent of motive power, Chicago & Eastern Illinois, urged car men to continue to exert every effort in eliminating delays to transportation which are under their immediate command. He also presented, as chairman of one of the committees of the association, some detailed suggestions regarding maintenance practices designed to assure more reliable and economical operation of freight cars.

The meetings of the Car Department Officers' Association, with a maximum attendance of 300, were presided over by President J. S. Acworth, supervisor of equipment, General American Transportation Corporation, who reviewed the activities of the association during the past year in his presidential address. In addition to membership committee reports by the four vice-presidents of the association and the report of Secretary-Treasurer F. L. Kartheiser, chief clerk-mechanical, Chicago, Burlington & Quincy, standing committee reports on the following subjects were presented by their respective committee chairmen: Shop Operation, Facilities and Tools—Welding, J. A. Deppe, superintendent car department, Chicago, Milwaukee, St. Paul & Pacific; Passenger Train Car Terminal Handling—Air Conditioning, E. J. Hollahan, general car foreman, Illinois Central; Lubricants and lubrication, J. R. Brooks, supervisor lubrication and supplies, Chesapeake & Ohio; Freight Car Inspection and Preparation for Commodity Loading, F. J. Swanson, general car department supervisor, Chicago, Milwaukee, St. Paul & Pacific; Interchange and Billing for Car Repairs, M. E. Fitzgerald, master car builder, Chicago & Eastern Illinois, and D. E. Bell, A. A. R. instructor, Canadian National; Loading Rules, H. H. Golden, supervisor, A. A. R. Interchange and Accounting, Louisville & Nashville; Painting, C. L. Swing, general foreman, Pullman-Standard Car Manufacturing Company.

In addition to the speakers mentioned, the association was addressed by Roy V. Wright, managing editor, *Railway Age*. Mr. Symes' address on "The Function of the Car Department in Rail Transportation" is abstracted

later in this article. The formal title of Mr. Garber's address was "Car Maintenance, Performance and Expense."

## Election of Officers

On the last day of the convention, the following officers were elected for the ensuing year: President, A. J. Krueger, superintendent car department, New York, Chicago & St. Louis, Cleveland, Ohio; vice-president, E. S. Smith, master car builder, Florida East Coast, St. Augustine, Fla.; vice-president, F. E. Cheshire, general car inspector, Missouri Pacific, St. Louis, Mo.; vice-president, G. R. Andersen, district supervisor car maintenance, Chicago & North Western, Chicago; vice-president, J. M. Brophy, superintendent car department, Illinois Central, Chicago; secretary-treasurer, F. L. Kartheiser, chief clerk-mechanical, Chicago, Burlington & Quincy, Chicago.

The Board of Directors includes: J. S. Acworth, supervisor of equipment, General American Transportation Corporation, Chicago; P. P. Barthelemy, master car builder, Great Northern, St. Paul, Minn.; W. A. Bender, master car builder, Alton, Chicago; C. Claudy, master car builder, Grand Trunk Western, Battle Creek, Mich.; J. A. Deppe, superintendent car department, Chicago, Milwaukee, St. Paul & Pacific, Milwaukee, Wis.; J. W. Fogg, vice-president, MacLean-Fogg Lock Nut Co., Chicago; L. H. Gillick, assistant to vice-president, Vapor Car Heating Company, Chicago; H. H. Golden, supervisor A. A. R. Interchange and Accounting, Louisville & Nashville, Louisville, Ky.; E. B. Hall, chief mechanical officer, Chicago & North Western, Chicago; J. E. Keegan, chief car inspector, Penn., Chicago; G. E. McCoy, assistant general superintendent motive power and equipment, C. N., Toronto, Ont.; J. P. Morris, general mechanical assistant, Atchison, Topeka & Santa Fe, Chicago; C. J. Nelson, superintendent of interchange, Chicago Car Interchange Bureau, Chicago; J. J. Root, Jr., assistant to vice-president, Union Tank Car Company, Chicago; C. E. Strain, superintendent car department, Pere Marquette, Grand Rapids, Mich.; S. O. Taylor, master car builder, Missouri Pacific, St. Louis, Mo.; H. H. Urbach, mechanical assistant to executive vice-president, Chicago, Burlington & Quincy, Chicago; and E. M. Wilcox, assistant superintendent of equipment, New York Central, Chicago.

## Importance of the Car Department in Rail Transportation

By J. M. Symes\*

I know that your committees have spent much of their own time on these reports and the membership should show their appreciation by discussions from the floor. You can judge the success of any meetings such as this one by the open discussion from the members. Your companies encourage attendance at these meetings be-

\* General Manager, Western Lines, Pennsylvania.

cause they believe that you and the companies you represent profit by what you learn here. I believe you can learn better by discussion of your common problems with people who are familiar with such problems than in any other way.

The subject assigned me for discussion at this meeting is your importance in rail transportation. Before getting into that it might be well to review briefly the railroad situation during the past 20 years and what part you have played in it, what the railroad situation looks like for the future and what part you will probably be called upon to play in that development.

The railroad industry was operated by the government during the World War. They returned it to private operation in 1920. Without trying to place any responsibility for the cause, we all know the railroad plant when turned back was in a generally run-down condition and entirely inadequate to meet the transportation requirements of the country. In 1923, after going through car shortages and inefficient operation, the heads of the railroads met and considered their problem. They knew the answer was in the expenditure of billions of dollars in plant and facility to meet the increasing transportation requirements expected of the railroads. These men had the courage and foresight to go through with such a program and in 1923 more than one billion dollars was so expended—and for the eight-year period, 1923 to 1930, an average of \$842,000,000 was so expended—even during the depression years, 1931 to 1939, an average of \$259,000,000 was spent in capital improvements.

#### Peak Traffic Handled with Great Efficiency

These enormous expenditures permitted the handling of increased traffic, including the 1929 peak movement, with the greatest efficiency ever attained and without car shortage or congestion of any kind. Then came the depression in the fall of 1929, causing the railroads to set aside, in good order, hundreds of thousands of freight cars and thousands of locomotives. Naturally with revenues barely sufficient to meet payrolls, taxes and other necessary operating expenses, purchases of new equipment and maintenance of old equipment were practically nil. It was necessary, as cars and locomotives became bad order, to set them aside and replace them with good order equipment withdrawn from storage.

This condition obtained for about six years and during the latter part of 1936 orders for new equipment began again to appear and during 1937 we were back in the market for 75,000 new freight cars and 373 new locomotives. Car and locomotive shops began working on bad order equipment; in other words, we had used up the fat we had been living on for six or seven years. Then last fall, it will be recalled, we experienced an abrupt rise in business—the greatest rise in so short a time that has ever been experienced in railroad history. The railroads had no difficulty in meeting the situation.

My purpose in reciting the railroad situation during the past 20 years is to show that the railroads have proved that they can handle peak traffic efficiently and, during depression periods with little capital, have been able to do a pretty good job—all things considered.

The car department does not get the credit it should for helping make these accomplishments possible. The transportation fellow is the one who gets the credit—he can point his finger to a statistical record of operating efficiency that will amaze you and I would like to take a little time to comment on that. The first measure of operating efficiency and perhaps the best, is the transportation cost of handling one thousand tons a distance of one mile. This cost has been reduced from \$2.15 in 1925 to \$1.59 in 1939. Had the 1925 unit cost obtained

in 1939, it would have added \$500,000,000 to the transportation expenses of United States railroads. This truly remarkable accomplishment was caused principally by:

(1) Increasing the average freight train speed about 50 per cent since 1923. The factors in bringing about this improvement were many—bigger and better locomotives, better track, better signals, more favorable grades, elimination of curves and others of a lesser degree. But better cars and better maintained cars eliminating road failures are just as important as any other factor in accomplishing this result.

(2) Increasing the gross tons per train about 18 per cent since 1925. Here again bigger and better cars and better maintained cars contributed largely to the accomplishment.

(3) Freight locomotive fuel consumption per one thousand gross ton-miles averaged 112 lb. during 1939. During 1925 it required 140 lb. of coal to do the same job—increased efficiency of 20 per cent, in fuel performance. Cars, better ones, bigger ones and better maintained ones contributed to this accomplishment.

#### Transportation Expenses Reduced \$500,000,000 a Year

Summing up what I have said—the billions of dollars that were spent in capital improvements together with other improvements in the art of transportation have, in the short period of 15 years, resulted in the railroads being able to handle trains 18 per cent heavier, 50 per cent faster, with 20 per cent less fuel, causing a reduction in transportation expenses of five hundred million dollars a year. The reductions obtained by increased operating efficiency have more than been passed on to the shippers in the way of lower rates; in other words, we have been able to give a better service to the public at lower rates than ever before, which has enabled us at least to meet partially our subsidized competition. Had we not been able to do this the volume of traffic now being handled by the railroads would be much less today.

Improving the service and reducing costs is the problem of every railroad officer. A real accomplishment has been made during the past 15 years and the car department has been just as much responsible for it as any other department on the railroad. We are a long way off from peak efficiency and even greater progress will be expected of all of us during the next 15 years. The car department will have to be in the front line in this parade of progress. They will be expected to contribute substantially in solving railroad problems and should be constantly thinking about it. A few of the problems that will confront us are:

(1) The railroads must be able to keep their car mile earnings up if they are going to be a successful transportation agency. This might in some cases mean a premium in the way of certain rate reductions. The car department should be figuring ways and means of providing the proper kind of cars to bring this about.

(2) The railroads must maintain and improve their train load and haul more revenue tons per train. This will be partially accomplished by reducing the ratio of non-revenue load to pay load without in any way sacrificing safety. Considerable has been accomplished in this direction but much remains to be done.

(3) They will have to increase their average freight train speed. Remarkable progress has been made in this direction and many freight trains are now operating at speeds of 60 miles per hour but the 1939 average of 16.7 miles per hour, after all, is not very fast. Elimination of delays to trains by reason of car failures enroute will help improve this situation.

They will have to provide varying types of equipment  
(Continued on page 646)



# Locomotive Maintenance Men Meet at Chicago

Problems of locomotive repair, inspection and maintenance facilities discussed at four-day meeting

**O**VER 150 members of the Locomotive Maintenance Officers' Association met at the Hotel Sherman, Chicago, October 22 to 25, for the four-day 1940 annual meeting. At the opening session on Tuesday morning this association assembled with the members and guests of the three other mechanical associations and the Allied Railway Supply Association, to hear an address by Col. Robert S. Henry, assistant to president, Association of American Railroads. F. B. Downey, assistant shop superintendent, Chesapeake & Ohio, presided at all of the technical sessions of the association.

At later sessions the following papers and addresses were discussed: What Members of the L. M. O. A. Can Do to Improve the Service on All Railroads, by C. B. Hitch, superintendent motive power, Chesapeake & Ohio; Design, Operation and Maintenance of Diesel-Electric Locomotives, by H. V. Gill, supervisor Diesel engines, Atchison, Topeka & Santa Fe; Future Locomotive Air Brake Maintenance, by J. P. Stewart, general supervisor of air brakes, Missouri Pacific Lines; Use of Modern Machinery and Tools in Locomotive Repairs, by D. J. Sheehan, superintendent motive power, Chicago & Eastern Illinois; Roundhouse Problems of the Present Day, by H. E. Hinds, assistant mechanical engineer, Burlington Lines, and Maintenance of Locomotives on Long Runs, by Lee Robinson, superintendent of equipment, Illinois Central.

On Thursday, over 500 members of the coordinated associations, supply representatives and guests attended a luncheon given by this association in honor of the members of its Advisory Board, D. S. Ellis, chief mechanical officer, Chesapeake & Ohio; O. A. Garber, chief mechanical officer, Missouri Pacific Lines, and J. Roberts, chief of motive power and car equipment, Canadian National. The principal speaker at this luncheon was John M. Hall, director of the Bureau of Locomotive Inspection, Interstate Commerce Commission. Mr. Hall spoke on the responsibility of the locomotive maintenance officer and the federal inspector, and in remarks preliminary to his address, made an eloquent plea to railroad officers in behalf of the enginehouse foremen with respect to the long hours these men are required to be on duty. In commenting on this, Mr. Hall said, in part, "It is to our sorrow, that there are some railroads in the United States that expect roundhouse foremen to put in 12 and 13 hours a day on the job. I cannot conceive of a man who has worn himself out hot-footing it through a roundhouse and shop, if he has one, sitting down and doing constructive thinking. Many railroads have gotten away from this, and I hope for the benefit of the service, as well as for the benefit of the roundhouse foreman, many of whom will be higher officers in time, that they will see the light and give these men a reasonable period of work."

Mr. Hall dealt at some length and in detail with the responsibility of maintenance officers and federal inspectors under the rules of the inspection law and outlined the purpose and necessity of daily and periodic inspec-

tions. He laid particular stress on the fact that it is not uncommon to find the same defects reported repeatedly together with indications that at least some attempt had been made at repairs each time the defects were reported. As an example of this situation, he cited a succession of failures on a comparatively small but important railroad, where, in a 12-month period, a total of 54 stoker failures occurred, 34 of which resulted from failure of mechanical stoker parts; 10 were the result of miscellaneous causes, worn parts or maladjustments and the remaining 10 were attributed to foreign substances in the coal. By far the greater number of these failures, said Mr. Hall, could have been avoided by proper inspection, proper attention to inspection reports and the timely application of needed repairs. In concluding his paper, he said, that if we are to be successful in eliminating locomotive failures and their accompanying casualties we must not allow a locomotive to leave a terminal with any defect that is likely to cause failure enroute. The only safe policy, he said, is the full recognition of the fact that a potential accident lurks in the shadow of many apparently insignificant defects. We should not, he added, neglect the personal element because success in any undertaking depends largely on human relations. Good will and mutual confidence are paramount. We all do our best work under the stimulus of encouragement and the approval of the people for whom we are working. Sincere efforts to advance the legitimate interests and happiness of those whom we supervise are more essential to success than elaborate organization or modern shop facilities, desirable as they may be.

## Improving Railroad Service

C. B. Hitch, superintendent of motive power, Chesapeake & Ohio, in discussing the manner in which the Locomotive Maintenance Officers' Association can help to improve railroad service dealt with the necessity of planning carefully a railroad's maintenance program and the necessity of modern facilities in order to keep down the cost of maintenance. In dealing with planned work programs, Mr. Hitch said in part, "One of the best ways I know to keep down the cost of maintenance and, at the same time maintain equipment in reasonably good shape is to program and schedule the repair work properly. The repair program should be based strictly on the requirements of the service. In the case of locomotives, this requires a thorough knowledge of the condition of the power and of the motive-power requirements on the various parts of the railroad involved, together with a forecast of the probable amount of traffic to be handled during the period for which the program is being set up. With information on these three points at hand, it is possible to determine the approximate number of locomotives which will require repairs and the kind of repairs which will have to be made."

Later on in his paper he dealt with the importance

of modern shop facilities and the value of reclamation work and said in part that, "It is not always possible, for financial or other reasons, to obtain the machine tools which we would like to have. However, considerable good can often be accomplished by careful study of existing shop layouts and rearrangement of existing facilities to reduce lost motion and promote a smooth flow of work through the shop; also by improving the condition of existing machine tools, which can frequently be done at comparatively little expense. There is one point in connection with economical maintenance of equipment which is not always given the attention it should have. This is the reclamation of material. The cost of new material now is increasing, therefore the reclamation of used material is becoming more important and a considerable amount of money can be saved or lost in the scrap pile. The reclamation of material should be under the direction of an organization responsible for this work alone. Such an organization need not be large except on railroads where the quantity of material handled is sufficient to justify the operation of a centralized scrap-handling and reclamation plant. In many cases, one properly qualified man will suffice."

In concluding his paper Mr. Hitch said that "the first duty of a locomotive maintenance officer is to do the best he can with what he has in the way of equipment, facilities and personnel. In order to accomplish this with the maximum benefit to his company, he must qualify himself thoroughly for his job. This can only be done by continual study of the problems involved; by keeping up with the latest developments in the field and by familiarizing himself with the latest information available. I know of no better way to accomplish this than by affiliation with an organization such as yours and by taking part in its activities. I repeat that, in my opinion, the members of the Locomotive Maintenance Officers' Association can do more to improve service on all railroads by promoting the free interchange of ideas among its members than by other means."

### Enginehouse Problems

H. E. Hinds, assistant mechanical engineer, Burlington Lines, presented a comprehensive paper dealing with enginehouse problems of the present day. He dealt in considerable detail with the inspection of power and the absolute necessity of cooperation between railroad departments and, in speaking of facilities at engine terminals, said, in part: "Improved engine terminal facilities, both in machine tools and equipment for servicing power, have entailed a responsibility upon supervision to see that all work is performed safely. This feature is not an enginehouse problem, it is a duty that supervision insist upon the work being performed properly and safely. It is, of course, definitely known that the caliber of work turned out is governed by the safe and efficient manner in which it is performed. An enginehouse foreman can no longer see that work is properly assigned to the various members of his working force, but he must know that cranes, hoists, scaffolding, hammer handles, chisels, ladders, slings, etc., are all in good condition, so as to avoid accidents. Today, the necessity of having trained mechanics who can work their regular assignments is too important, and the cost of their having a lost-time accident too expensive to allow a supervisor to neglect the safe performance of work under his direction."

He concluded his paper with the following remarks, "I have tried to lay down a few simple suggestions. Boiled down they spell co-ordination and co-operation, but I want to add another thought. If someone has established what might be called a fence around your

department, break it down. Get acquainted with the trainmaster and superintendent. You will find them good fellows who will be only too glad to help if you get up against it. After all, we are working for the same railroad and there should be no fences between us."

### Modern Machinery and How to Get It

D. J. Sheehan, superintendent motive power, Chicago & Eastern Illinois, in speaking on the use of modern shop equipment in locomotive repairs laid particular stress on the necessity of making complete and thorough analyses of the jobs involved when preparing requests for new machine tools and shop equipment. In discussing job analysis, Mr. Sheehan said that, "It is well to keep in mind that a unit of shop equipment, like a locomotive, can only justify its existence if it is kept busy. Therefore, it is obvious that if a special-purpose machine, designed to do one job and one only is installed in a small shop with a limited volume of work, it will probably prove to be an unsound investment whereas the same machine installed in a specialized department of a large shop may effect such savings as to pay for itself in two or three years."

One of the problems which locomotive maintenance officers sometimes find difficult to solve, said Mr. Sheehan, is that of securing new equipment. He took exception to the fact that, as some supervisors say, the railroad company does not have the money to purchase certain machines and countered with the statement that, "Railroad managements are always on the alert to replace tools and equipment that will result in a net saving. If the installation of a new machine will actually result in a net saving and, if the officer who recommends the installation makes a careful analysis of the potential savings he should have no difficulty in selling the idea to his management."

"One of the greatest difficulties that a locomotive maintenance officer has in selling his management with the idea of a new installation is that he does not himself thoroughly analyze costs and conditions with existing machinery and tools and develop a sound comparison of the savings possible by the installation of more modern types of machinery. If he cannot conscientiously satisfy himself that there are very definite savings to be made, he should never attempt to convince his management that there may be some savings in new installations."

In concluding his remarks, Mr. Sheehan said that, "in my opinion, there has never been a time in the history of American railroads when it is more important for officers and supervisors responsible for locomotive maintenance to study every job and the equipment with which the job is performed with the idea of determining whether or not obsolete facilities are depriving us of the output we need at a price we can afford to pay. As the volume of railroad traffic increases and the demand for motive power becomes more pressing, we are going to be up against a real problem to keep maintenance costs from getting out of line. Careful planning and the development of an intelligent program for the replacement of obsolete equipment offer the most logical solution of the problem of controlling costs."

### Other Papers

J. P. Stewart, general supervisor air brakes, Missouri Pacific, presented a paper dealing in detail with the maintenance of air brake equipment and in his paper outlined the type of organization needed in the shop and enginehouse to care for the proper maintenance of air-brake equipment.

H. V. Gill, supervisor of Diesel engines, Atchison,



Topeka & Santa Fe, presented a paper on the design, operation and maintenance of Diesel-electric locomotives in which he told of the experience of his road in the use of Diesel-powered equipment. Mr. Gill outlined the maintenance methods and facilities used on his road and included, in his paper, some interesting figures in relation to the operating costs of Diesel-powered equipment.

Lee Robinson, superintendent of equipment, Illinois Central, spoke on the subject of long locomotive runs and in introducing his remarks said that it is more than likely that the so-called long run is now the common run and the short run is the rarity. He concluded by saying that, "the objective of long runs is to obtain increased utilization of locomotives, but the economics of the situation existing on each railroad will eventually determine the length of locomotive runs on the various properties in the country.

"Mechanical-department officers and supervisors should familiarize themselves with the operating conditions on the various divisions over which the locomotives under their jurisdiction operate, in order fully to understand the work these engines are expected to do between final terminals and handle the power to meet satisfactorily the existing conditions peculiar to those runs."

#### Election of Officers

The following officers were elected for the ensuing year: President, J. C. Miller, general foreman, New York, Chicago & St. Louis (Nickel Plate), Conneaut, Ohio; first vice-president and secretary-treasurer, J. E. Goodwin, general foreman, Missouri Pacific, North Little Rock, Ark.; second vice-president, F. J. Topping, master mechanic, Chesapeake & Ohio, Hinton, W. Va., and third vice-president, S. O. Rentschler, general foreman, Missouri Pacific, Sedalia, Mo. Executive board members were elected—for a one-year term as follows: W. L. Rice, superintendent of shops, Reading Company, Reading, Pa.; F. W. Ekins, general foreman, Atchison, Topeka & Santa Fe, Chicago, and J. P. Stewart, general supervisor of air brakes, Missouri Pacific, St. Louis, Mo. For a two-year term the members elected are: E. J. Kueck, mechanical engineer, St. Louis-Southwestern, Pine Bluff, Ark.; W. P. Buckley, superintendent of shops, Chicago, St. Paul, Minneapolis & Omaha, St. Paul, Minn., and George Crowder, superintendent motive power, Georgia & Florida, Douglas, Ga. Other members of the executive board are President Miller, the retiring president, F. B. Downey, and J. E. Goodwin, secretary-treasurer.

Action was taken by the association to increase the Advisory Board to five members. G. C. Christie, general superintendent equipment, Illinois Central, and D. J. Sheehan, superintendent motive power, Chicago & Eastern Illinois, were elected to that board.

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## Car Men Promote Progress

(Continued from page 643)

to meet the varying demands of shippers for the transportation of particular commodities. At the same time they will have to guard against the creation of so many different types of cars because usually they are one-way cars and 50 per cent of their mileage is empty—not a healthy situation. Traffic, transportation and car department officers will have to co-operate closely and bring forth more all-purpose cars, taking care of shippers' requirements, yet keeping empty mileage to the minimum.

(5) Greater use will have to be made of freight cars. An average of 31.7 miles per car per day is not very good. Fifteen car days for each car loaded in the United States will have to be bettered. When cars are needed they can earn nearly \$7 per day for the railroads on a 15-day turn-around. If this time could be cut to 10 days, and I venture the opinion that it will within the next 10 years, the railroads could earn nearly \$10 per car per day and handle the business with one-third less equipment. We are going to have to persuade shippers to cut down on the loading and unloading time, increase freight train speeds, eliminate terminal delays, eliminate car failures on the road, put cars through the shop faster and have them come out better; improved maintenance and shop practices go a long way in accomplishing this.

(6) The railroads will have to have equality of treatment with their subsidized competition. We do not want subsidy because we believe that all transportation agencies should pay their way. While the recent passage of the transportation bill does little for the railroad industry, nevertheless it is recognition on the part of government that there is a railroad problem and the creation of the Board that is to study the transportation problem might develop the real answer to it. Public opinion is usually slow in recognizing certain situations but once recognized, action is usually taken to correct it. You gentlemen can do a lot for the railroad industry by keeping the public properly informed as to the true railroad problem.

#### Car Department Forces Play Important Part

Summing up what I have said as to the future of the railroads—they must get more business by rendering a better service—increase operating efficiency by reducing costs, and get a "square deal" when the transportation policy of this country is finally determined. The railroads have but one product to sell—transportation. Their entire revenue is secured from the movement of cars—both freight and passenger. Car department forces have been largely responsible for past improvements—of necessity they will have to be responsible for a major part of future improvements. I know they are capable of living up to their responsibility and will come through as expected.



General Store of the Chicago, Burlington & Quincy at Aurora, Ill.

# Improvements in Boilermaking — Theme of Chicago Meeting

Master Boiler Makers consider the boiler construction and maintenance methods required to meet today's operating demands

**T**HE twenty-seventh annual meeting of the Master Boiler Makers' Association was held at the Hotel Sherman, Chicago, on October 22-25, inclusive, with an attendance of about 300 members and guests. After meeting at a joint session with the three other mechanical-department associations to listen to an address by Col. Robert S. Henry, assistant to the president, Association of American Railroads, the Master Boiler Makers opened their program with brief addresses by President C. A. Harper, general boiler inspector, Cleveland, Cincinnati, Chicago and St. Louis, and by L. B. Rhodes, president, Allied Railway Supply Association. Later sessions were addressed by Dr. Edward C. Elliott, president, Purdue University; A. G. Trumbull, chief mechanical engineer, advisory mechanical committee, Chesapeake & Ohio, and M. A. Quinn, master mechanic, Delaware, Lackawanna & Western.

Eight committee reports, three individual papers and the History of the Association presented by John A. Doarnberger, retired, past president of the association and formerly master boiler maker, Norfolk & Western, were included in the program. The papers were by Ray McBrien, engineer of tests, Denver & Rio Grande Western, on Service Aging of Firebox Materials; by a Committee of the International Acetylene Association of which C. W. Obert, Sr., was chairman, on the Use of Acetylene Cutting and Welding in the Boiler Shop, and by Dr. W. G. Theisinger, welding and metallurgical engineer, Lukens Steel Company, on the Heat and Mechanical Stresses in Welding.

## Standard Boiler Practices Proposed

All of the committee reports presented at the meeting dealt with technical details relating to boiler construction and maintenance. Of particular interest, however, was the report on the Application of Iron, Steel and Alloy Rivets and the Preparation of Sheets. Recognizing that the high capacity of modern locomotive boilers has required the use of alloy steel in many instances, more exact workmanship in boiler fabrication and better maintenance methods, the committee stated, "We desire to recommend to the association only such methods which we know are attributes to first-class workmanship and we believe the standards set by this association should be consistent with the scientific development of boiler design and the demand being made for keeping the steam locomotive in service."

While mentioning boiler materials, design and maintenance and their effect on boiler performance, the committee went into detail in recommending a procedure to be followed in boiler fabrication. In the conclusion of its report, the committee made the following statement, "It is our opinion that due to the importance of this topic, particularly as to the fabrication of alloy-steel sheets and the use of alloy rivets, this topic should be continued and a committee be appointed representing the locomotive builders and the railroads with a mechan-

ical engineer or metallurgist to be selected by this association to act as chairman, this to be done with the approval of the Mechanical Division, Association of American Railroads. This proposed committee would report further on this subject at the 1941 annual meeting with a view to recommending a standard practice for the locomotive builders and the railroads."

## Election of Officers

At the last session of the meeting the following officers were elected to serve for the ensuing year: President, C. W. Buffington, general master boiler maker, Chesapeake and Ohio, Huntington, W. Va.; vice president and chairman of the executive board, M. C. France, general boiler foreman, Chicago, St. Paul, Minneapolis and Omaha, St. Paul, Minn.; secretary-treasurer, A. F. Stiglmeier, boiler department foreman, New York Central, Albany, N. Y.; executive board members: chairman, F. A. Longo, general boiler foreman, Southern Pacific, Red Wood City, Cal.; Sigurd Christopherson, supervisor of boiler inspection and maintenance, New York, New Haven and Hartford, East Milton, Mass.; Frank Yochem, general boiler inspector, Missouri Pacific, St. Louis, Mo.; and E. H. Heidel, general boiler foreman, Chicago, Milwaukee, St. Paul and Pacific, Milwaukee, Wis. The following continue as members of the executive board: R. W. Barrett, general boiler foreman, Canadian National, Stratford, Ont.; C. J. Klein, retired locomotive inspector, Interstate Commerce Commission, Albany, N. Y.; E. E. Owens, general boiler inspector, Union Pacific, North Platte, Neb., and B. C. King, general boiler inspector, Northern Pacific, St. Paul, Minn.

## Some Neglected High Pressures

In the first part of his address, Dr. Edward C. Elliott, president, Purdue University, summarized briefly the steam generating research that has been and is now being carried on at Purdue. Speaking on the subject of his address, he continued: As you are obliged to deal with the problem of high pressures in boilers, so I shall attempt to point out that there are other sorts of high pressures in life that are yet more difficult to know the nature of. Naturally, I am permitted to deal with but a few of these. You will note that my title says *neglected* high pressures.

We live in a high-pressure age—an explosive age. Over much of the world today men are devoting, with devilish ingenuity, their scientific skills for the making of high-pressure engines designed for destruction of their civilization. Mutual mass murder is the tragic undertaking that engages millions. Mankind now knows as never before, that certain words are in reality the shells of ideas of great destructive power. Communism, Fascism, Naziism are the word tanks of dangerous high-



pressure stuff. These are not my present pressures. Nevertheless, in the present destroying turmoil of the world, affecting the lives of all of us, however far we are from the existing battle lines, it is well that we keep ourselves reminded of some of the beginnings of the course of human events leading to this moment.

For more than two decades the affairs of civilization have been daily processed by what we now see to be the mechanisms of unprecedented social change. The first World War did more than destroy men, material, money, and monarchies. It shredded the fabrics of the philosophies, the politics, the economics, the standards of conduct by which men and nations had, through the ages, gradually learned to shield themselves while moving slowly along the paths of progress. Especially, within the year now closing there has taken place a convulsive awakening in this country of ours to the stupendous fact that we too are being subjected to those physical forces and those spiritual influences which bid fair to remake, either slowly or suddenly, the modes of civilization. To some degree, all the major social institutions, all the industries of our day have already felt the impact of those blows producing more or less radical changes in the long-established modes and standards of human living and human working. The accepted nineteenth century formula of American democracy and individuality—a social life in which, as James Russell Lowell so tersely expressed it, each individual counted as one—no longer appears to be an easily attainable reality.

No industry, no craft, no profession, can expect to survive and to serve a swiftly moving today by standing still and silent in the old places of yesterday.

We hear much today of the *American Way of Life*, selected and glorified as the greatest, the smoothest and the safest of all the high roads for human living and advancement. The daily happenings, throughout the world filled with conflict, chaos and fear, are compelling us to restudy this pattern of the way of American life; this pattern designed by our pioneering forefathers and fashioned out of the sound substances of personal industry, personal initiative, personal self-reliance, personal thrift and personal foresight.

The essence of our American Way of Life is described by the word democracy. That democracy which in terms of free men, means work for all, homes for all, health for all, hope for all, help for those ever willing to help themselves, and consequently, happiness for all; all attained through the willing cooperation of all, under the leadership of the unselfish wisest. The democracy that requires the learning of the new lessons taught by the life of each generation—the democracy that is constantly re-energized by the trained competency of the youth of each on-coming generation, and constantly revitalized by the ideals of these youth.

By far the most important of all the high pressures of modern human life comes from the inner urge of each individual to possess that liberty which will permit him, without unjust and discriminating handicaps, to gain a place on and in the American Way of Life. All government, all education, all industry, all management must recognize the fact of the existence of the individual with his own aspirations. Better boilers must not be built at the cost of worse men.

#### MUST ANALYZE MEN AS CAREFULLY AS MATERIALS

I am aware that I am speaking to group many of which are managers of the work of other men. As one of such managers, I have often wished that all of those who manage and all of those who are managed might learn the lesson found on one of the pages of a book

that I first knew from my father's book shelf—"The Autocrat at the Breakfast Table"—by that wise man of New England, Oliver Wendell Holmes.

There Holmes points out that when Tom and Jim come together there are not merely two persons present, but six; Tom as Tom thinks he is; Tom as Jim thinks he is; and finally the real Tom known only to his Maker. Then in a similar manner, there are three Jims; Jim as he thinks he is; Jim as Tom thinks he is; and the real Jim known only to his Maker. Here, too, originate many of the high pressures of daily life. Here management, whether charged with the making of biscuits, brake shoes or boilers, has the unsolved job of harmonizing the three Toms of the worker and the three Jims of the management. We shall have neither peace nor production in industry until we attempt to analyze men as carefully as we do material; until we recognize the importance of practicing the art of humanics—to use the favorite word of my late friend, Lawrence A. Downs, of the Illinois Central.

Would that I had not wasted so much of my opportunity, and had started this address with a discussion of what to me is the greatest of all the pressures of modern American life—the pressure of youth for an opportunity to become qualified to live according to the American pattern. The greatest of all the tragedies of our time is the one that has come to the young people during the past ten years, denied by the dire circumstances of the economic depression from having the traditional equality of opportunity for work. I hope that this association will not cease to proceed energetically for the widening and bettering of the chances for apprentices. The time has come in our modern economy when there is no place for untrained workers. Compulsory education should mean schooling, not merely including reading and writing, but requiring skill for a place demanding skill. We, as a people, cannot survive in a state of liberty if the land is filled with idle and untrained youth.

Thus, lest the pressure of your impatience become explosive, I stop with these references to the pressures that all of us feel today. The pressures of new knowledge—of the world conflict—of the urge of men for liberty—of the fact that men are different and not who they seem to be, and finally, the pressure of youth for its place in the world to be.

#### Problems of Boiler Maintenance

A. G. Trumbull, chief mechanical engineer, advisory mechanical committee, Chesapeake and Ohio, spoke of the number of problems that have been re-introduced and now demand solution because modern transportation requirements have made the boiler the measure of power rather than the engine proportions. It is important, he said, to an extension of the use of steam locomotives that the relationship between flue and combustion-chamber length, between grate area and heating surface and between superheater pipes and flue diameters be established on such a basis as to produce maximum evaporation per pound of coal with a minimum of weight.

There are some problems in the setting of flues, he continued, that have not been solved. These include whether or not a copper ferrule is either desirable or necessary, whether or not a bead should be turned on the flue before welding or whether prossering adds to the life of a welded flue.

Mr. Trumbull called attention to the influence of welding on the reduction in flue work required and the possibility that our views concerning the spacing of flues need revision.

In closing Mr. Trumbull spoke in part as follows,

"One other subject of current importance to boiler operating efficiency and maintenance is the question of material for fireboxes. In spite of the general use of flexible bolts, the conditions affecting firebox life have been influenced to such an extent by high rates of evaporation, by increases in the size of fireboxes and in the working pressures carried, that the subject of firebox steel and the possibilities of increased life that might result from the use of some one of the alloys now available for firebox application, has again been raised."

### Committee Reports

The committee reports presented at the meeting were as follows: Oxy-Acetylene and Electric Processes in Boiler and Tender Work, chairman, F. A. Longo, general boiler foreman, Southern Pacific; Pitting and Corrosion on Firebox Sheets Back of Grate Bearers, chairman, R. W. Barrett, general boiler foreman, Canadian National; Means to Improve Water Circulation in the Boiler, chairman, E. H. Gilley, general boiler foreman, Grand Trunk Western; Treating Boiler Feedwater Chemically, chairman, E. E. Owens, general boiler inspector, Union Pacific; Application of Iron, Steel and Alloy Rivets, chairman, E. H. Heidel, general boiler foreman, Chicago, Milwaukee, St. Paul & Pacific; Flues Cracking Through Bead—Tube and Flue Application, chairman, J. N. Stoner, supervisor of boilers, New York Central; Cinder Cutting of Firebox Sheets, Flues, Tubes and Smokeboxes, chairman, S. Christopherson, supervisor of boiler inspection and maintenance, New York, New Haven & Hartford, and Maintenance of Tender Cisterns, chairman, L. R. Haase, district boiler inspector, Baltimore & Ohio.

## Fire Losses in 1939

(Continued from page 633)

tively little revenue for transporting airplane engines, is obliged to assume extraordinary liability, and ultimately these motors for commercial planes are used in the service of the subsidized competitors of the railroads."

The principal speakers at the meeting were Holcombe Parkes, associate director of public relations of the Association of American Railroads, and A. R. Small, president of the Underwriters' Laboratories and the National Fire Protection Association. Mr. Parkes spoke on sabotage, saying that the more subtle forms which undermine thoughts are a real and important problem to every railroader in the nation. Modern sabotage technique, he continued, could be applied to railroads with the result that "every difference of opinion between the railroads and their employees, the railroads and the regulatory authorities, the railroads and their patrons would be magnified and broadcast; and every written or spoken word that could possibly be employed or twisted to discredit railway management would be highlighted. We would hear from many sides that the railroads are decadent; that they are no longer capable of giving this nation the kind and quantity of transportation service it needs; that railroad officers and railroad men are incompetent and apathetic; that railways must go the way of the stagecoach and the canal boat."

Mr. Small discussed the 1940 electrical code pointing out major changes and additions. New types of rubber compounds for insulation included in the new code, he said, show that more attention has been given to wiring. The importance of the new types of insulation, he stated, are shown by the fact that one resists a temperature of

60 deg. C. and another 75 deg. C., while rubber insulation withstands only 50 deg. C.

## New Book . . .

*J. Pierpont Morgan, An Intimate Portrait, 1837-1913*, by Herbert L. Satterlee. 595 pages. 9¼ in. by 6½ in. Bound in cloth. Published by the Macmillan Company, New York. Price, \$3.75.

The elder J. Pierpont Morgan hated publicity. This, coupled with his great success as the dean of American finance, gave birth to a deluge of sensational half-truths in the press of the nation. Hence, persons with an honest interest in the history and practices of American business and finance will welcome this excellent definitive biography of a great man by his son-in-law who shortly before Mr. Morgan's death in 1913 was given permission to write the biography on condition that it be published "long after I am gone and people understand better some of the things they have been making a row about."

Author Satterlee has been a practicing journalist, and he writes well. Inasmuch as he was associated with Mr. Morgan in business and served as counsel for the "Katy" he is more than competent to handle technical details.

Entirely apart from the fascinating narrative of a busy life which made contact with every facet of an expanding country, railroad men will find in this work whole chapters of important railroad history. First interested in railroad questions as a young man in Wall Street in connection with the importation of British rails, Mr. Morgan shortly after became an intimate friend of Samuel Sloan, president of the Lackawanna, who started him on a career of managing the finances of railroad properties. Thereafter he plunged into problems of the carriers with characteristic thoroughness and in the course of a long life probably exerted as much influence on the shaping of our large railroad systems as any other one man.

Readers will find an exciting and carefully-weighed account of Mr. Morgan's notable reorganization of the ill-fated West Shore and purchase for the New York Central in 1885, wherein, without legal precedents, the financier drafted forms and procedures which became models for subsequent "revamps." Here, also, were first embodied the Morgan provisions for a prudent capitalization allowing for future development of the property. There follow details of his reorganization of the Chesapeake & Ohio (then called "the chronic insolvent") in 1888, the creation of the Southern from the wreckage of the Richmond Terminal in 1893 and the re-construction of the weak-sister Erie and the strong Union Pacific in 1895. Through all of these stories appear the dramatic fights between Morgan and his two rivals—Jay Gould and E. H. Harriman.

Mr. Satterlee also presents an excellent portrait of the famous meetings in Mr. Morgan's residence in New York which led to the "Agreement of the Presidents of January, 1889." For years before Mr. Morgan had seen the need for "a community of interests" to save the roads from suicidal rate-cutting and dishonest pandering to big shippers. Had his "gentlemen's agreement" plan found real support from key railroad executives, the history of railroad regulation by government fiat might have been a less tragic one.

## Communication

[If the anonymous writer of an extended and intelligent criticism of our editorial policies—who wrote with pencil in block letters, mailing his communication from Washington, D. C.—will indicate how we may reply to him, we shall be glad to do so. We are not concerned with learning his identity, although his elaborate precautions on this score, we assure him, are superfluous. People do not stay in the field of industrial journalism as long as *Railway Age* has without learning that the guarding of confidences entrusted to it is the fundamental principle of the profession.—EDITOR.]



# NEWS

## Anti-Trust Suit Against A.A.R.

"Buster" Arnold presses his complaint to force carriers into cahoots with trucks

The legal question of whether or not the Department of Justice's anti-trust suit against the Association of American Railroads, its members and its officers, should be dismissed at this time because of the fact that the issue involved is moot was orally argued this week before Justice Jennings Bailey of the United States District Court for the District of Columbia. The government, through Thurman Arnold, assistant attorney-general in charge of anti-trust activities, brought the suit against the A. A. R. last fall, charging that the association and its member roads had passed several resolutions which had the effect of binding the members to refrain from entering into joint rates and through routes with motor carriers.

Oral argument for the railroads was made by Carter Fort, general solicitor for the A. A. R., while the government's views were presented by Frank Coleman, special assistant to the Attorney General. Briefly, Mr. Fort's position may be summarized by saying that the A. A. R. feels that the action it and its member roads took last year in rescinding the resolutions which formed the basis of the case justifies the court in entering a decree of dismissal. Mr. Fort presented to the court the background of the case, showing how, during the past year, negotiations were carried on between himself and Mr. Coleman to the end that a rescinding resolution was agreed upon by both parties and was passed by the A. A. R. and submitted to its members with a large majority of the members acquiescing in the action of the A. A. R. board of directors. The railroads understood, said Mr. Fort, that upon the rescinding of the resolution the government would agree to a dismissal of the suit. Now, he pointed out to the court, the government has apparently changed its mind and desires that further action be taken.

Mr. Fort further contended that the issue which had formed the basis of the suit, the adoption of the resolutions forbidding joint rates and through routes with motor carriers, was now moot and that it would be unfair to the railroads to continue the case. He argued that trying the case and entering a judgment would be only theoretical and binding in the future and would prejudice any future actions which the A.

A. R. might decide to take. If, in the future, he said, the member roads should take such action as constituted a violation of the Sherman anti-trust act, the government could then proceed against them. He also pointed out to the court that, in his opinion, it was quite obvious that no fear need exist that another such resolution might be passed in the future.

Mr. Coleman took a diametrically opposite view. The government, he declared, does not fear that the resolution will be reenacted, but what it is concerned with is a "realistic" approach to the whole problem. It is interested in finding out whether or not the railroads actually mean what they say they mean and will enter into joint rates and through routes with the motor carriers of the country. "The resolution," said Mr. Coleman, "is a mere symbol. The agreement has not vanished and the government is fearful that although there is no agreement in writing, yet an oral one may well exist which will have the same effect as the written one."

## President Receiving Suggestions for Study-Board Members

President Roosevelt stated at his October 25 press conference that he had no one in mind at that time for appointment to the study board called for in the Transportation Act of 1940. The President added that he had asked some people for suggestions, but such suggestions had not all been submitted.

## Santa Fe Adds Train to Los Angeles-San Diego Service

The Atchison, Topeka & Santa Fe, on October 27, added another train to its service between Los Angeles, Cal., and San Diego. This train of conventional equipment, including a steam locomotive, a buffet car, a dining car and deluxe chair cars, leaves San Diego daily at 11:30 a. m., and arrives in Los Angeles at 2:30 p. m. Returning it leaves Los Angeles at 5 p. m. and arrives in San Diego at 8 p. m.

## "Century" Is Re-equipped

Modern, streamlined, lightweight, Pullman sleeping cars were added to the "Twentieth Century Limited" of the New York Central on October 25 to replace streamlined Pullman cars that were placed in service on the Century in June, 1938. At the same time, other new cars, making a total of 50, were assigned to the "Commodore Vanderbilt" and other fast trains of the New York Central. The replaced cars of the Century are being used on the "Commodore Vanderbilt," the "Wolverine" and other trains.

## Wheeler & Truman Lay More Blame

Solons get into 3 more transactions, condemn holding companies anew

The Senate this week received from Senators Wheeler and Truman three reports on railroad finances, which are in addition to the three reviewed in last week's issue. These reports are the result of the work of Senator Wheeler's subcommittee which has recently completed several years of hearings and investigation in the field of railroad financial practices and holding company control. The three new reports, like the ones reviewed last week, are parts (15, 16, and 17) of Report No. 25 and carry the following titles: "Chicago Great Western Railroad Company-Kansas City Southern Stock Transaction"; "Chesapeake & Ohio-\$15,000,000 Preference Stock Issue of 1937"; and "Delaware & Hudson System-Purchases of Lehigh Valley and Wabash Stocks."

In all three reports Senators Wheeler and Truman reach the conclusion that railroad holding companies should either be drastically controlled or completely abolished; that the Interstate Commerce Commission should be given greater power over non-carrier subsidiaries; that railroad accounting rules should be more stringently enforced; and that a special court should be set up to expedite railroad reorganizations.

After alleging in part 14 last week that the Chicago Great Western had purchased its own stock in violation of an Illinois law forbidding a corporation to purchase its own stock by buying it in the name of one of its subsidiaries, the Mason City & Fort Dodge, part 15 discusses the purchase by the Great Western of "a large block of stock of the Kansas City Southern at more than double the market price for the shares, in violation of the laws of Missouri and Illinois, and in evasion of the rules of the Interstate Commerce Commission."

The report goes on to say that "The extravagant purchase by the Chicago Great Western of a large block of Kansas City Southern stock, at double its stock market price, following secret negotiations between the president of the Chicago Great Western and the Van Sweringen interests, is an especially shocking example of abuse of railroads by holding company executives in control. . . . The use of Chicago Great Western funds and credit to purchase Kan-

(Continued on page 660)

## 9 Months N. O. I. Was \$440,433,552

2.36 per cent return compares  
with \$355,716,808 or 1.91  
per cent last year

Class I railroads of the United States in the first nine months of 1940 had a net railway operating income of \$440,433,552 which was at the annual rate of return of 2.36 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American

district for the nine months totaled \$1,574,629,259, an increase of 13.2 per cent compared with 1939, but a decrease of 21.7 per cent compared with 1930; operating expenses totaled \$1,112,591,925, an increase of 10.1 per cent above the same period in 1939, but a decrease of 25.5 per cent under the first nine months of 1930.

The September net in the Eastern district was \$35,279,958 compared with \$45,517,808 in September, 1939, and \$43,450,802 in September, 1930.

In the Southern district the net for the nine months was \$50,369,673 or 2.22 per cent; for the same period in 1939 it amounted to \$50,716,858 or 2.24 per cent, and for the same period in 1930 it was

## I. C. C. Still Vexed at Sioux Sidings

Idea seems to be, if you try to  
do a customer a favor, it's  
agin' the law

Affirming its finding that the providing and maintaining by the Sioux City Terminal Railway Company of private sidings within the plant areas of the Cudahy Packing Company and Armour & Company result in violations of the Interstate Commerce Act, the Interstate Commerce Commission, in a report on reconsideration of the Sioux City switching case, has set forth an amplified statement of the grounds underlying the foregoing finding. As was the original report, reviewed in the *Railway Age* of July 27, page 156, the report on reconsideration is by Commissioner Alldredge; Chairman Eastman filed a separate opinion "concurring in part," while the dissents of Commissioners Mahaffie and Rogers were noted.

Meanwhile the commission has denied petitions for reopening, rehearing and reargument of the proceeding (I. & S. 4419), generally regarded as one which will become a leading case on this maintenance-of-private-sidings matter. In his amplified statement, Commissioner Alldredge, speaking for the commission majority, said in part:

"It is conceded in the petition that it is a correct principle of law that a railroad has neither the duty nor the right to furnish free industry tracks where it has available in the vicinity adequate and accessible tracks for industry use, but petitioners contend that where this requirement is not met the railroad may and should furnish free industry tracks. In our opinion this contention comprehends a greater obligation on the part of a railroad carrier than actually exists. It assumes that before ceasing to provide at its own expense private loading and unloading tracks within an industry plant a carrier must first construct public team tracks adequate to handle the entire traffic received and delivered on the industry tracks. A carrier is justified in assuming in such circumstances that industries will not attempt to change the conduct of their business by using public team tracks but will provide their own private plant tracks if the railroad does not provide them and that the additional public team tracks, if constructed, would not be used. Carried to its logical conclusion, petitioners' contention would require that if the railroads in this or any other city, no matter how large the city is or how many industries it has, do not provide public team-track space to accommodate the entire traffic of such city, then they have a legal obligation to provide all the private industrial loading and unloading tracks in that city and can be compelled to furnish them if they are not voluntarily provided. . . . There is no duty on a railroad to provide more public team tracks than are required for the traffic actually tendered to it for loading and unloading on such tracks. If the petitioners actually de-

(Continued on page 661)

### CLASS I RAILROADS—UNITED STATES

#### Month of September

	1940	1939	1930
Total operating revenues	\$382,603,351	\$381,117,880	\$462,209,448
Total operating expenses	260,178,842	251,166,939	316,494,334
Taxes	38,030,388	32,629,664	31,238,205
Net railway operating income	74,193,237	86,529,622	102,852,390
Operating ratio—per cent	68.00	65.90	68.47
Rate of Return on property investment—per cent	2.48	2.90	3.39

#### Nine Months Ended September 30

	1940	1939	1930
Total operating revenues	\$3,125,855,174	\$2,862,079,851	\$4,035,083,343
Total operating expenses	2,287,168,621	2,141,494,821	3,018,212,919
Taxes	301,447,366	265,970,091	271,435,608
Net railway operating income	440,433,552	355,716,808	648,115,287
Operating ratio—per cent	73.17	74.82	74.80
Rate of Return on property investment—per cent	2.36	1.91	3.44

Railroads. In the first nine months of 1939, their net was \$355,716,808 or 1.91 per cent, and in the first nine months of 1930, it was \$648,115,287 or 3.44 per cent. The September net was \$74,193,237 or 2.48 per cent, compared with \$86,529,622 or 2.9 per cent in September, 1939, and \$102,852,390 or 3.39 per cent in September, 1930.

Gross operating revenues for the first nine months of this year totaled \$3,125,855,174 compared with \$2,862,079,851 for the same period in 1939, and \$4,035,083,343 for the same period in 1930, an increase of 9.2 per cent in 1940 above 1939, but 22.5 per cent below 1930. Operating expenses amounted to \$2,287,168,621 compared with \$2,141,494,821 in 1939, and \$3,018,212,919 in 1930—6.8 per cent above the former, but 24.2 per cent below 1930.

Class I roads in the nine months paid \$301,447,366 in taxes compared with \$265,970,091 in the same period in 1939, and \$271,435,608 in the same period in 1930. For September alone the tax bill amounted to \$38,030,388, an increase of \$5,400,724 or 16.6 per cent above September, 1939. Twenty Class I roads failed to earn expenses and taxes in the nine months, of which six were in the Eastern district, five in the Southern district, and nine in the Western district.

Gross for September amounted to \$382,603,351 compared with \$381,117,880 in September, 1939, and \$462,209,448 in September, 1930. Operating expenses totaled \$260,178,842 compared with \$251,166,939 in the same month in 1939, and \$316,494,334 in September, 1930.

Class I roads in the Eastern district for the nine months had a net of \$255,187,144 or 2.84 per cent; for the same period in 1939, their net was \$202,437,057 or 2.26 per cent, while in 1930 it was \$341,178,879 or 3.86 per cent. Gross in the Eastern

\$63,017,348 or 2.6 per cent. Gross in the Southern district for the nine months amounted to \$395,575,980, an increase of 6.7 per cent compared with the same period in 1939, but a decrease of 19.5 per cent under 1930. Operating expenses totaled \$301,763,998, an increase of 8.3 per cent above the same period in 1939, but a decrease of 22.4 per cent under 1930.

Class I roads in the Southern district for September had a net of \$7,545,486 compared with \$9,317,234 in September, 1939, and \$8,827,060 in September, 1930.

Class I roads in the Western district for the nine months had a net of \$134,876,735 or 1.82 per cent. For the same period in 1939 their net amounted to \$102,562,893 or 1.39 per cent, and for the same period in 1930 it was \$243,919,060 or 3.21 per cent. Gross in the Western district for the nine months amounted to \$1,155,649,935, an increase of 5.1 per cent above the same period in 1939, but a decrease of 24.6 per cent below the same period in 1930; operating expenses totaled \$872,812,698, an increase of 2.4 per cent compared with the same period in 1939, but a decrease of 23.1 per cent under the same period in 1930.

For September alone the roads of the Western district had a net of \$31,367,793, compared with \$31,694,580 in September, 1939, and \$50,574,528 in September, 1930.

### Another Accounting Order

The Interstate Commerce Commission, Division 1, has issued another of those orders whereby it is proceeding piecemeal fashion to a general revision of the accounting classification. The present order, dated October 17 and effective January 1, 1941, contains eight items covering changes, additions and deletions in the classification.



## Would Ease Order on Loading Levy

Treize gives reasons why low charges are justified for loading forwarder traffic

Railroads would be permitted to continue making non-compensatory charges for loading and unloading carload freight at Chicago and St. Louis if the Interstate Commerce Commission should adopt Examiner R. N. Treize's proposed report upon further hearing in that phase of the Freight Forwarding Investigation. The examiner would have the commission modify, in accordance with the foregoing, that finding of the forwarder investigation's original report which held that "the practices of certain of the respondents in this proceeding, of loading and unloading carload freight of forwarders at charges which are substantially less than the cost of performing such service, have the effect of reducing below their published tariff rates the transportation charges paid by such forwarders."

"Upon the more complete record as to the details of loading and unloading carload freight at Chicago and St. Louis," Mr. Treize said, "the inseparable relation of this service to the line-haul service and its similarity to absorptions of connecting-line switching charges, and of the fact that in the last analysis the imposing of the loading and unloading charges on the basis of the average cost thereof would be tantamount to increasing the total charges for a through service, it is recommended that the commission find that the charges for these services when performed in connection with line-haul transportation on which a freight revenue is collected, do not have the effect of granting unlawful concessions to such forwarders, shippers or consignees, or to reduce below the published tariff rates the transportation charges paid by such persons; and that no unjust discrimination or undue or unreasonable preference and advantage is shown upon this record, nor is any other violation of the act disclosed."

The charges for loading or unloading are 2.75 cents per 100 lb. or 55 cents per ton. The proposed report reviewed evidence which indicated that at Chicago the average cost per ton of loading or unloading forwarder traffic has been \$1.324; the comparable figure for non-forwarder traffic was 91.5 cents, while the average for traffic handled on team tracks has been 47 cents. At St. Louis the cost of the service on forwarder traffic has been 88 cents per ton; no other traffic is loaded or unloaded there except by the New York Central, whose cost was 86.7 cents per ton—"but this figure also included other expenses making the figures not comparable." Considering the loading and unloading services as independent of the line-haul services, the annual net losses of performing the former for forwarders at Chicago are shown to have ranged from \$3,970 for the Baltimore & Ohio to \$220,009 for the Wabash; the losses on non-forwarder traffic at Chicago ranged from \$144 for the New York Central to \$91,486 for the Chicago & North Western. At St. Louis the loss range on

forwarder traffic was from \$3,477 for the Illinois Central to \$19,617 for the Wabash.

Despite the above showing, Examiner Treize was convinced that nothing much could be done about it. "Respondents' witnesses," he said, "are in accord that to refuse to load and unload either forwarder or non-forwarder carload freight or to undertake to increase the charges for that service to the basis of costs would lead inevitably to the diversion of a substantial part of it to the motor carriers and be disastrous to the traffic of the rail lines. The difference between the cost of loading and unloading this traffic for shippers, and the charge imposed for that service may be said in one sense to be the price respondents pay for obtaining the traffic. . . ."

Among testimony as to why motor carriers could not impose loading charges was talk of "the gradual diversion of motor vehicle traffic to private motor vehicles, the increasing tendency of chain stores, mail order houses, and similar institutions to invest in their own motor vehicles, and the greater use of those vehicles as a substitute for the services of common and contract carriers."

### V. R. Hawthorne to Address St. Louis Car Men

At the next meeting of the Car Department Association of St. Louis at the Hotel DeSoto, St. Louis, Mo., on Tuesday evening, November 19, the principal address will be delivered by V. R. Hawthorne, secretary of the Association of American Railroads, Mechanical division, on Accomplishments and Responsibilities of Car Department Officers. A dinner at 6 p. m. will precede the meeting at 8 p. m.

### War Department Revises Its Shipping Regulations

Bringing its regulations in line with a provision of the Transportation Act of 1940 which stipulates that section 3709 of the Revised Statutes shall not be construed as requiring competitive bids by any common carrier subject to the Act, the War Department has issued an order authorizing transportation of its freight by all highway freight carriers on the standard forms of government bills of lading. The Department's ruling thus brings an end to the old practice, complained of by the motor carriers, of requiring them to submit competitive bids, insofar as the War Department is concerned.

The text of the order provides that "the standard forms of Government bills of lading will be used for obtaining transportation of public property by all highway freight carriers when that method of transportation is to be utilized; provided that where practicable rate tenders will be obtained in advance and in letter form from such carriers when the quantity to be shipped at one time from one origin to one destination aggregates one or more truck loads."

Although the submission of rate tenders would technically constitute a form of competitive bidding, it was pointed out at the War Department that such a practice would apply only where ample time was available for a selection of a carrier to handle the job.

## Report of Car Service Division

Heavier loading of cars and short-routing seen as aids to better car supply

The increase in serviceable equipment as compared with last year and the continuing cooperation of shippers in the matter of efficient car utilization are expected by the Car Service Division to result in a meeting of this fall's equipment needs satisfactorily. This assurance is given in the Division's annual report which is now being distributed.

In another place the report lays considerable stress on the economies which come from heavier loading of cars. The new high mark of 36.8 tons set in 1939 as the average tons per car of carload freight is cited; and the report goes on to observe that if the average load last year had remained at the 1938 level "it would have required 652,000 more car loads to have handled the traffic." Moreover the improved loading during the October, 1939, peak "was equivalent to adding 20,000 cars to the equipment supply without capital cost." The report added: "Perhaps no single factor today—with all operating procedure under studied control—presents so definite an opportunity for reduction in expense as does this item of heavier loading."

Meanwhile the report had told how recent efforts of the Division have been designed to assure prompt handling of traffic growing out of the national defense program. This has involved a considerable amount of on-the-ground contact with contractors and military officers "to insure appreciation of the necessity and provision for the prompt release of rail equipment." Also, there has been the checking of cars under load for export "to discover and promptly correct any tendency toward undue accumulation and delay."

Continuing, the report reviews various specific actions taken in the foregoing and other connections by the Division's Box Car Section and Open Car Section. Then comes a discussion of the control system for port traffic which was set up in October, 1939. Thus far it has been necessary to place only one control over the movement of traffic into any port. This covered the movement of grain and soya beans into the Port of New Orleans because of the limited elevator capacity at that point; the control was placed on November 25, 1939, and removed on May 10, 1940—and the permit system in effect was handled "to the entire satisfaction" of all interested parties.

Next the report recalls how the Division's Troop Movement Section was reorganized on August 1 as the Military Transportation Section with enlarged duties and an increase in personnel. During the year ended September 1, the Military Transportation Section furnished routings for the movement of more than a quarter of a million men for the army, navy, marine corps and C. C. C., exclusive of the men handled in the fall maneuvers of the four armies. While there is no measure of the

amount of revenue returned to the carriers as a result of movements of the military, the railroads have thus far earned a gross of \$120,998,000 from C. C. freight and passenger movements.

The discussion of the automobile car situation points out that "the number of machines delivered overland and shipped by boat accounted for 61.6 per cent of the 1939 United States production, which was the largest proportion of the production handled by these agencies during any calendar year on record." Meanwhile "there has been no shortage of device-equipped automobile cars for the handling of all the commercial shipments offered by the industry." Nor has there been any difficulty in taking care of all requirements for refrigerator cars.

The aforementioned discussion of economies from heavier loading is followed by some comment on the "manifold opportunities to reduce operating costs by sympathetic short routing of cars where no proper loading is available and a circuitous home route is involved." A plan in that connection was adopted sometime ago by the Southwestern Association of Car Service Officers; it provides for joint reciprocal short routing of cars between 17 railroads. "The experience of 20 months operation of this plan," the report says, "proves the sound basis of the arrangement and confirms the expectation of material economies in the handling of empty cars. A total of 8,451 cars have been short routed at an average saving of 618 miles per car as compared with the distance the cars would have traveled had they followed their normal home route in the reverse of the last loaded movement." The Car Service Division suggests that "this illustrates the possibilities inherent in any comprehensive application of short routing principles"; and it adds that its 13 district managers are available to assist in the development of such plans—just as its district manager at Dallas, Tex., worked with the Southwestern Association of Car Service Officers.

The report's 12 pages of text are followed by 10 others setting forth those tables and charts which have been found "essential for the proper functioning" of the Division.

#### Eastman Subsidy Study on Sale

The Government Printing Office has issued a circular offering for \$2.40 per set the four volumes of former Co-ordinator Eastman's "Public Aids to Transportation" study. "The report," the notice says, "should be of interest not only to carriers and shippers and employees of transportation agencies, but also to legislators, regulatory bodies, officials responsible for the construction and maintenance of highways and other public transportation facilities, tax officials, financial institutions, students of transportation, and many others."

#### Long Island to Re-Open Spur to Camp Upton

The Long Island announces that it is now rebuilding the 1½-mile spur over an old right-of-way connecting its main line with Camp Upton at Yaphank, N. Y., abandoned following the World War. The road expects to use the spur not only for movement of troops into and out of the camp,

#### Air Transport Spokesman Wants Federal Aid to Capture Freight Traffic

Believing that airlines will become one of the principal freight carriers of the next decade, Captain G. R. Wilson, president, National Aeronautic Association, told members of the National Association of Commercial Organization Secretaries meeting in Boston, Mass., on October 22, that the industry needs from \$500,000,000 to \$600,000,000 for the development of a national integrated airport system. Said he, "Last year 374,000 pieces of airmail were carried by rail because there were no air transport facilities either at the point of origin or destination. Of all the airports in this country, only 17 per cent have any lighting facilities. Seven per cent have hard-surface runways, only 64 per cent have phone service, 10 per cent can accommodate transport or bombing ships, and at only 64 per cent can you purchase a gallon of gasoline."

It was Captain Wilson's prophecy that "passenger and mail traffic will be as incidental to the airlines as it is now to the trunk lines of the railroads. Airlines will carry all kinds of goods (from medicines to pianos) so swiftly and economically that no firm will be able to afford to ship any other way. It will mean that nothing that is grown or conceived will be more than ten hours away from your desires."

effective about mid-November, but will, through special sidings, provide in addition direct access to large warehouses now being constructed by the Army for the storage of food and other supplies.

In June, 1917, when Camp Upton was opened, until October, 1919, the Long Island carried there and to Camp Mills (now Mitchell Field) a total of 4,385,264 passengers, including troops moved on government order, soldiers on furlough and visitors. In addition, the road handled 1,136,146 tons of freight—some 38,000 carloads—to and from the two camps. The heaviest month was July, 1918, when the road carried 308,642 men on 475 special trains, while the heaviest single day was July 13, 1918, when 32,015 men were moved on 48 special trains of 611 cars.

#### Boston Wool Truckers Exempt From Motor Act

The Interstate Commerce Commission, Division 3, has issued a decision the effect of which is to grant virtual exemption from regulation under the Motor Carrier Act to truckers engaged in the transportation of domestic wool from the piers of water carriers at Boston, Mass., to warehouses in the Boston switching district. The decision in Ex Parte MC-25 found that the terminal transportation of the wool, originating at points outside Massachusetts, was in interstate commerce; but that such transportation was exempt from

Part II in instances where the tariffs of the water carriers on file with the commission provide for warehouse delivery. And in all other instances the transportation, being within a municipal zone, is exempt, except as to qualifications and maximum hours of service of employees and safety of operation or standards of equipment.

Another finding is that the rates, rules, regulations and practices of respondent motor and water carriers applicable to the transportation of the wool are not in violation of the provisions of the Motor Carrier Act.

#### I. C. C. Again Delays Crack-Down on Forwarder-Truck Joint Rates

The Interstate Commerce Commission has further postponed from October 31 until December 11 the effective date of its outstanding orders which require the discontinuance of joint-rate arrangements between forwarders and motor carriers. The orders are in Ex Parte No. MC-31, Tariffs of Forwarding Companies, and MC-2200 which involves tariffs of Acme Fast Freight; petitions seeking the postponements were noted in the *Railway Age* of October 26, page 600.

#### I. C. C. Issues Regulations for Merger Applications

The Interstate Commerce Commission has issued regulations governing the filing of applications for mergers and trackage rights in conformity with provisions of the Transportation Act of 1940. The new regulations, which are similar to those now in effect, apply to railroads and water carriers, and are issued under authority of section 5 (2) of the new Act, which gives the commission the power to pass on the mergers of railroads, motor carriers, and water carriers. It is understood that a similar announcement regarding motor carriers will be forthcoming in the near future.

#### Date for Minimum Wage Argument is Set

Oral argument on the recommended establishment of a 36 cents-an-hour minimum wage for the Class I railroads and a 33 cent minimum for the short line roads will be heard by Colonel Philip B. Fleming, administrator of the Wage and Hour Division, United States Department of Labor, at 10:00 a.m., November 25, at the Hotel Raleigh in Washington, D. C.

The announcement of the argument states that participation will be limited to those who entered appearances at the hearings on the recommendations held on September 23 and 24 in Washington before Henry T. Hunt, principal hearings examiner of the Division. Notices of intention to appear at the oral argument before the Administrator must be filed with the Division on or before November 18, while written briefs will be received if filed on or before the same date.

Counsel for the Amalgamated Association of Street, Electric Railroad and Motor Coach Employees of America has written the Administration to the effect that the Association filed an appearance in opposition to the recommended minimum wages because they were considered too low. At



the hearing before Examiner Hunt the Association did not ask to have the recommendations set aside.

### Union's Plan for Reorganization Rejected by Mexican Government

A reorganization plan formulated by the Union of Railroad Workers of Mexico has been rejected by the Mexican government because proposed economies of 8,000,000 pesos do not meet the immediate financial needs of the railroads. A counter-proposal has been made by the government as follows:

1. Immediate reduction of salaries to the basis of May, 1938, when the Workers Administration was created.
2. The government is willing to return a tax of 5.64 per cent of gross earnings to the Union providing it is used to acquire new equipment. The tax amounts to approximately 8,000,000 pesos a year.
3. The establishment of technical committees, with the intervention of the government when necessary, to study ways of bringing about greater operating efficiency and increased earnings. The committee will study possible revisions of labor contracts, tariffs, the co-ordination of the government's highway policy with the railroads and administration problems.

The government has taken the position that if the Workers Administration establishes a sound financial position, improves operating efficiency and reestablishes discipline, the government will be able to obtain foreign credit for the development of a large rehabilitation program.

### Trucking Combine Seeks Right to Issue Securities

The Transport Company has applied to the Interstate Commerce Commission for authority to issue 110,000 shares of six per cent cumulative preferred stock and 1,116,667 shares of common stock, the proceeds to be used to acquire the stock of certain trucking corporations and to provide for working capital. As reported in last week's issue, J. Edward Davey, chief of the Bureau of Motor Carriers' Section of Finance, recommended that the commission grant the major part of this company's application to acquire several trucking companies operating along the Atlantic seaboard from Massachusetts to Florida and into Ohio, West Virginia, Tennessee, Louisiana and Alabama.

In his recommended report, Mr. Davey suggested that the exercise of authority proposed to be granted by him should be conditioned upon the applicant's first se-

curing the requisite authority for financing the transactions involved, and he went on to say that "Nothing herein is to be construed as an expression of opinion on issues which may arise in connection with applications which may be filed under section 214 with reference to financing..."

The petition estimated that the new company would have net proceeds from the stock issue of \$25,950,000, the face amount of the stock being \$26,000,000; \$50,000 was allocated for expenses.

### Railway Labor Still Opposes St. Lawrence Project

"The Standard Railroad Labor Organizations will continue to vigorously oppose the development of the St. Lawrence for either power or transportation, or both," says an item in the October 29 issue of "Labor," organ of the railway unions. Grand Chief Engineer Alvanley Johnston of the Brotherhood of Locomotive Engineers has been selected by the Railway Labor Executives' Association "to look after the rail workers' interests in this matter." As noted in the *Railway Age* of October 26, page 599, President Roosevelt is now pressing forward with his plan to develop additional power facilities on the St. Lawrence as a national defense project, and he has allocated \$1,000,000 from his special defense fund for preliminary work in that connection.

"The union chiefs," according to the "Labor" article, "take the position that, while the Administration is now pushing the proposal as a power project, the seaway feature could be readily added, and the country would find itself committed to the expenditure of at least \$300,000,000 to construct transportation facilities which are not needed, but which would drastically curtail the business of the railroads." Mr. Johnston, who will cooperate "with other opponents of the project," has accumulated "an immense amount of data showing that the undertaking is not economically sound."

### I. C. C. Orders Filing of Contracts for Protective Services

Acting under that provision of the Transportation Act of 1940 which gives it regulatory authority over contracts for protective service against heat and cold, the Interstate Commerce Commission, Division 3, has called upon railroads and express companies to file copies of all such contracts or agreements. The commission's increased authority in this connection came in that provision of the Transportation Act of 1940 which amended paragraph 14 of the Interstate Commerce Act's section 1 so as to make it unlawful for any railroad or express company to enter any contract for the furnishing of protective service, or to continue after April 1, 1941, as a party to any such existing contract unless the arrangements are approved by the commission.

The order calling for the filing of the contracts was issued in a proceeding docketed as Ex Parte No. 137, Contracts for Protective Services. It requires the filing by December 1 of copies of all currently operative contracts, agreements or written arrangements. Any unwritten contract, agreement or arrangement must be

### A. A. R. Open-Meeting Program Provides Addresses and Symposium on Railway Service

Sessions devoted to major addresses by representatives of shippers, railroad investors and agricultural interests, and a symposium on how railroad service may be further improved will comprise the program for the first open meeting of the Association of American Railroads to be held on November 13 and 14 at the Biltmore Hotel, New York.

With A. A. R. President J. J. Pelley in the chair November 13's forenoon session will be called to order at 10 o'clock. Addresses scheduled for this session will be delivered by John A. Stevenson, president of the Penn Mutual Life Insurance Company and chairman of the Life Insurance Institute, who will discuss the railroad situation from the standpoint of the investor; Donald Kirkpatrick, general counsel of the American Farm Bureau Federation, who will speak on the railroads and agriculture; and J. E. Bryan, president of the National Industrial Traffic League, who will talk about the railroad situation from the standpoint of the shipper.

There will be no speeches at November 13's luncheon, and on the afternoon of that day the A. A. R. member roads will meet in a closed executive session. At the dinner on the evening of the 13th, the speakers will be Representatives Clarence F. Lea, Democrat of California, and Charles A. Wolverton, Republican of New Jersey, respectively, chairman and ranking minority member of the House of Representatives committee on interstate and foreign com-

merce. Mr. Pelley will preside at the dinner session, and R. V. Fletcher, A. A. R. vice-president and general counsel, will be toastmaster.

The meeting will close with November 14's forenoon session at which the aforementioned symposium on railroad service and how it may be further improved will be held. The symposium will consist of a series of six 15-minute talks as follows: From the viewpoint of a railroad president, by E. E. Norris, president of the Southern; from the viewpoint of a railroad labor executive, by J. A. Phillips, chairman of the Railway Labor Executives Association; from the viewpoint of a railroad traffic officer, by J. T. Saunders, vice-president of the Southern Pacific; from the viewpoint of a railroad operating officer, by R. H. Smith, vice-president and general manager of the Norfolk & Western; from the viewpoint of a railroad general counsel, by Jacob Aronson, vice-president of the New York Central; from the viewpoint of a shipper, by Charles Donley, president of the National Association of Shippers' Advisory Boards. A. A. R. Vice-President and General Counsel Fletcher will present a summation of the symposium discussions and make the meeting's closing address.

The close of the A.A.R. program on the forenoon of the 14th will leave those attending free in time to be present also at the N. I. T. League luncheon on that day. Also, they will be on hand for the Railway Business Association dinner that evening.

covered by a written contract which is also to be filed. On or before March 15, 1941, the respondent railroads and express companies must inform the commission in writing which of the foregoing contracts or other writings are to remain in effect on and after April 1, 1941. Likewise any and all amendments to contracts must be filed on or before next March 15.

### Men's Wear Shippers Prefer Railway Express for Speed and Service

Some 69 per cent of manufacturers and retailers of men's wear specify Railway Express most frequently for shipping purposes when "rush handling" is required, according to replies to a survey made recently by the Marketing Research department of Fairchild Publications, New York. The survey shows that 69.5 per cent of manufacturers and 69.4 per cent of retailers who indicate preference specify Railway Express when rush shipments are to be made. Some 3.4 per cent of the manufacturers and 9.7 per cent of the retailers specify railroad freight most frequently, while about 20.3 per cent and 5.6 per cent of the retailers route by motor freight.

Replies from organizations covered by the survey indicating the portion of all shipments sent by the various transportation agencies break down as follows:

Shipping Methods	Manufacturers		Retailers	
	1939	1940	1939	1940
Freight, Railroad...	28.9	29.4	33.1	33.6
Motor Freight...	28.0	29.4	22.9	22.5
Parcel Post...	19.7	18.7	18.2	18.1
Railway Express...	23.4	22.5	25.6	25.6
Airplane...	...	...	2	2
	100.0	100.0	100.0	100.0

Asked to state preference for shipping method for rush shipments questionnaires replied as followed:

Shipping Methods	Manufacturers		Retailers	
	1939	1940	1939	1940
Freight, Railroad...	28.9	29.4	33.1	33.6
Motor Freight...	28.0	29.4	22.9	22.5
Parcel Post...	19.7	18.7	18.2	18.1
Railway Express...	23.4	22.5	25.6	25.6
Airplane...	...	...	2	2
	100.0	100.0	100.0	100.0

These totals exceed 100 per cent inasmuch as certain organizations indicated more than one shipping method.

### Club Meetings

The Traffic Club of Newark, N. J., will hold its annual meeting on November 4 at the Robert Treat hotel at 6:30 p. m. The program comprises a dinner (free to members holding 1940 membership cards), installation of officers and entertainment.

The New Jersey Industrial Traffic League will hold its 19th annual dinner on November 28 at the Robert Treat hotel, Newark, N. J.

A forum conducted by representatives of shippers and carriers on the subject of proposed unification of motor carrier rates in trunk line territory has been arranged for the next meeting of the Transportation Club of the Rochester (N. Y.) Chamber of Commerce on November 18, at 8 p. m. Analysis of findings and order of the Interstate Commerce Commission in Ex Parte MC-20 will be presented. Discussion is invited.

The Canadian Railway Club will hold its next meeting on November 18 at the Wind-

sor hotel, Montreal, Que., at 8:15 p. m. At that time L. Adams, vice-president, and F. C. Hasse, general manager, of the Oxweld Railroad Service Company, Chicago, will present papers, illustrated by films, entitled "Unionmelt Welding—a New Automatic Welding Process Speeds Locomotive and Car Construction" and "The Butt Welding of Rails by the Pressure Method," respectively.

The Traffic Club of Washington, D. C., has set February 13, 1941, as the date for its annual banquet to be held at the Mayflower Hotel in that city.

### British Roads Get Six P. C. Fare Boost

Fares on the main-line British railroads will be increased by 6 per cent effective December 1, according to a recent message by Minister of Transport Moore-Brabazon to the House of Commons. A consultative committee opened public hearings on August 26 to consider proposals of the Railway Executive committee to increase rates 6.8 per cent; apparently the government has granted all but the fractional element of the request. The new rate is expected to yield approximately \$184,000,000 per annum to balance a like increase in operating expenses. Following a recommendation of the Consultative committee, no increase will be made in rates for commuters' or workmen's tickets. The 6 per cent increase is in addition to an increase of 10 per cent in fares and freight rates authorized last May.

According to an announcement of the Ministry of Transport dated October 5, Sir John Reith, who was succeeded as Minister of Transport on that date by Lieutenant-Colonel J. T. C. Moore-Brabazon, had as his last duty in that post and interview with the representatives of the London Labor Party, the London Trades Council and the Joint Committee of the London Co-operative Societies, who expressed views of their respective organizations on the financial agreement between the government and the railway companies and urged that no action be taken which would result in an increase in the cost of traveling affecting members of their organizations.

### Shippers and Railroads Undertake New Furniture Damage Study

A study to ascertain the kind, nature and location of the damage to each piece of furniture shipped, in order to determine the cause, is being undertaken by shippers and the Freight Claim division of the Association of American Railroads, following the success of a similar study of damage to enameled stoves and ranges. The main feature of the study is a coupon, in duplicate form, which simplifies the reporting by the agent or consignee. Pictures of eight types of furniture and a list of types of containers and causes of damage are shown on the coupon, so arranged that a check mark will provide accurate and specific data.

Under the procedure of the study, consignees and agents are to fill in the coupon and mail it to the secretary of the division. When a sufficient number of coupons have been accumulated, they will be analyzed and the results sent to railroads, shippers,

package engineers and others interested. At the same time, shippers are being encouraged to use coupons for their own benefit so that when a new model is shipped, the shipper can at once determine its condition upon arrival and take corrective measures.

In the study of damage to enameled stoves and ranges much valuable information was uncovered, the most important of which was the disclosure that manufacturing processes of long standing often contribute to damage in transit. As a result of the study, several manufacturing processes were changed, containers re-designed and handling methods perfected.

### Budd Analyzes Florida Streamliner Business

Supplementing an analysis of the possibilities of streamlined trains throughout the country published last Spring (see the *Railway Age* for May 11, page 829) the Edward G. Budd Manufacturing Company has just issued a 100-page volume of the same character describing the operations and traffic results of streamliners to and within Florida which the Seaboard Air Line, Atlantic Coast Line and Florida East Coast have placed in service since February, 1939. A number of introductory pages reproduce advertisements by railroads and Florida civic organizations, while others show an array of press notices on the new services.

For each of the three railroads there is then presented a brief pictorial history, scenes of the new passenger equipment and of inaugural celebrations and a complete set of floor plans. Traffic figures for the Seaboard for the period February 2, 1939, to June 20, 1940, inclusive, show a total passenger list of 177,836; revenues of \$1,617,049 (south of Richmond, Va., only) and an average of 283 Silver Meteor passengers per trip. Figures for the East Coast show a 42 per cent increase in the number of passengers carried the first half of 1940 over the same period of 1939. On this road passenger revenues are 62 per cent of total freight receipts. Against a seasonal trend the F. E. C. carried 59 per cent more passengers in August, 1940, than in January, 1940 (before establishment of streamlined service). Local coach tickets sold at principal on-line stations this year show gains as high as 1225 per cent over corresponding months of 1939.

### A. R. D. A. Holds Annual Meeting in Washington

The thirty-second annual meeting of the American Railway Development Association was held in Washington, D. C., on October 24, 25, and 26. Among the speakers addressing the sessions of the meeting were J. J. Pelley, president of the Association of American Railroads; Robert S. Henry, assistant to the president of the A. A. R.; J. M. Souby, assistant general counsel of the A. A. R.; and John W. Mitchell, associate physiologist of the United States Department of Agriculture's Beltsville, Md., experimental station.

Mr. Henry told the association that the nation's railroads are ready to meet all transportation demands of the national defense effort because of the many coopera-



tive arrangements made to assure use of freight cars as "vehicles of transportation, not wheeled warehouses." He went on to point out that the delays in unloading cars, not operation shortcomings, hampered rail transportation during the World War.

Mr. Pelley spoke extemporaneously on the subject of "Trends in Transportation"; while Mr. Souby chose as his theme, "Federal Legislation of Concern to Railroads." Mr. Mitchell presented an illustrated lecture on "Growth Regulators and Plants."

New officers elected at the meeting were: President, John W. Haw, director department of agricultural development, Northern Pacific; first vice-president, J. M. Hurley, agricultural and industrial agent, New York, Ontario & Western; second vice-president, Earle G. Reed, supervisor agricultural and industrial development, Department of Traffic, Union Pacific; and secretary-treasurer, George E. Smith, industrial agent, New York Central.

### Gulf Coast Special of G. M. & O. Streamlined

The Gulf Coast Special operated by the Gulf, Mobile & Ohio between St. Louis, Mo., and Mobile, Ala., became a Diesel-electric streamlined train on October 27. At the same time, its schedule was cut from 18½ hr. southbound and 20½ hr. northbound to 17¼ hr. southbound and 17½ hr. northbound, and its name was changed to the Gulf Coast Rebel. Each of the two units comprising the train will consist of a new Diesel-electric locomotive and rebuilt railroad and Pullman cars. Lunch counter and table facilities have been incorporated in the dining car.

While the train provides service into and out of St. Louis, its terminus is Friendly avenue in East St. Louis, passengers from and to East St. Louis and St. Louis being handled on Greyhound buses. Through northbound passenger business is carried by taxicab from Friendly avenue to St. Louis Union station. Southbound through traffic is handled by taxicab from St. Louis Union station to the St. Louis Greyhound

terminal or from the Union Station to Friendly avenue.

Buses leave the St. Louis Greyhound terminal at 5:15 p. m. and East St. Louis at 5:20 p. m., and the train leaves Friendly avenue at 5:40 p. m., and arrives in Mobile at 10:30 a. m. the next morning. Returning the train leaves Mobile at 3:15 p. m. and arrives at Friendly avenue at 8:05 a. m., and buses arrive at East St. Louis at 8:20 a. m., and St. Louis Greyhound terminal at 8:25 a. m. Under the new plan of operation, the train does not enter the station at Cairo, Ill. Bus service is provided between it and the train stop at North Cairo.

### Freight Car Loading

Loading of revenue freight for the week ended October 26 totaled 837,651 cars, the Association of American Railroads announced on October 31. This was an increase of 23,742 cars, or 2.9 per cent, over the previous week, an increase of 8,293 cars, or one per cent, over the corresponding week in 1939, and an increase of 129,061 cars, or 18.2 per cent, over the same week in 1938.

As reported in last week's issue, loadings of revenue freight for the week ended October 19 totaled 813,909 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings			
For Week Ended Saturday, October 19			
Districts	1940	1939	1938
Eastern .....	161,564	173,421	141,317
Allegheny .....	165,627	172,261	123,777
Pocahontas .....	46,416	57,274	51,239
Southern .....	112,073	119,055	103,857
Northwestern ..	139,565	135,737	101,022
Central Western ..	131,288	138,555	129,567
Southwestern ..	57,376	59,986	54,505
Total Western Districts ....	328,229	334,278	285,094
Total All Roads	813,909	856,289	705,284
Commodities:			
Grain and grain products ....	36,742	44,578	46,496
Live stock ....	22,359	21,581	21,305
Coal .....	120,689	165,236	127,625
Coke .....	11,699	11,620	5,722
Forest products	41,412	39,231	32,446
Ore .....	69,728	62,533	28,064

Merchandise l.c.l.	158,789	160,298	159,438
Miscellaneous.	352,491	351,212	284,188
October 19 ...	813,909	856,289	705,284
October 12 ...	811,906	839,952	726,142
October 5 ...	805,986	830,102	702,616
Sept. 28 .....	822,434	829,696	696,908
Sept. 21 .....	813,329	809,752	669,704

Cumulative Total,  
42 Weeks ... 29,017,628 26,812,287 24,273,197

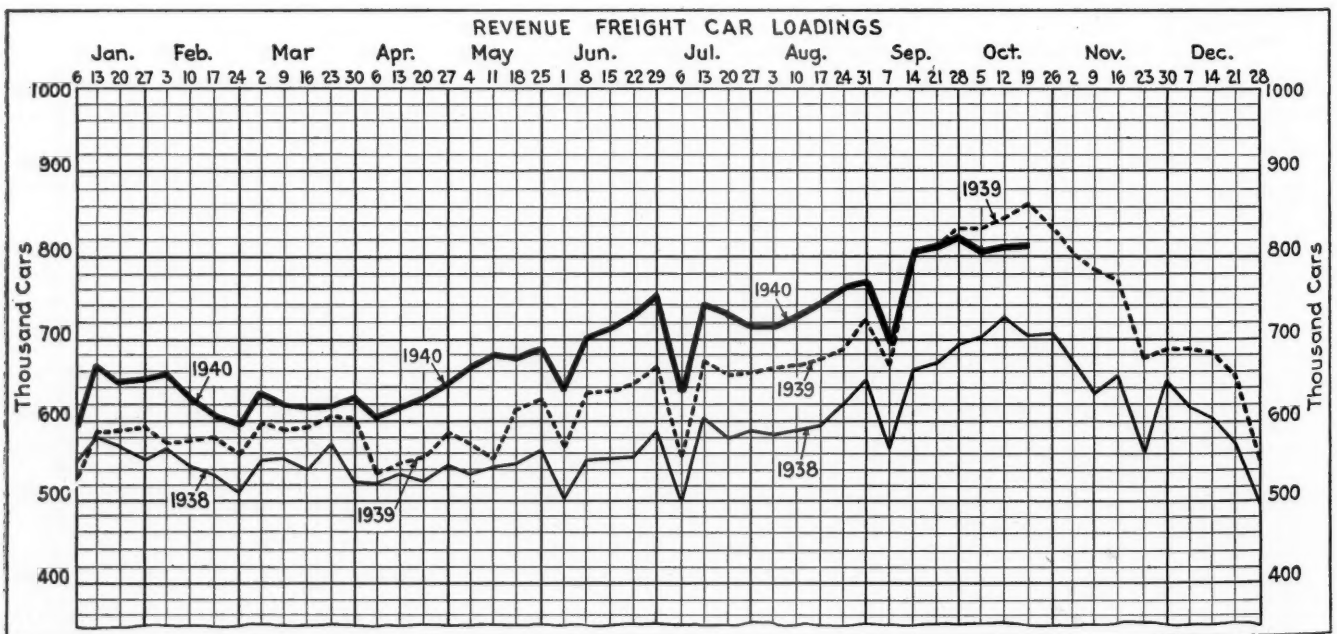
In Canada.—Carloadings for the week ended October 19 (the week containing a holiday) were 58,931, as compared to 64,522 in the previous week and 62,345 a year ago, according to the compilation of the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
Oct. 19, 1940 .....	58,931	26,305
Oct. 12, 1940 .....	64,522	25,217
Oct. 5, 1940 .....	63,578	26,132
Oct. 21, 1939 .....	62,345	27,166
Cumulative Total for Canada:		
Oct. 19, 1940 .....	2,232,301	1,028,763
Oct. 21, 1939 .....	2,021,996	885,323
Oct. 22, 1938 .....	1,967,156	853,911

### September Locomotive Shipments

September shipments of railroad locomotives totaled 46 as compared with 55 in August and 35 in September, 1939, according to reports received by the Department of Commerce's Bureau of the Census from the country's builders. Shipments for this year's first nine months totaled 374 locomotives as compared with 356 during the first three-fourths of last year. Unfilled orders at the end of September totaled 272 locomotives as compared with 277 at the close of August and 136 as of September 30, 1939.

The aforementioned 55 locomotives shipped in September include 38 Diesel-electrics and two of the gasoline-electric or gasoline-mechanical type for domestic service and six steam for export. The breakdown of the shipments during this year's first nine months was 41 steam, 280 Diesel-electrics and 14 of other types for domestic service and 39 steam for export. The 272 locomotives involved in the unfilled orders as of September 30 included 126 steam, 121 Diesel-electrics and four of other types for domestic service, and 18



steam, two Diesel-electrics and one other for export.

Data supplied by the Car Service Division of the Association of American Railroads on locomotive building in railroad shops show that three locomotives (all steam) were thus built in September, the same as in September, 1939. During this year's first nine months railroad shops built 56 locomotives (36 steam and 20 electrics) as compared with 36 (19 steam and 17 electrics) during the first three-fourths of 1939. As of October 1, there were on order in railroad shops 26 locomotives, including 12 steam and 14 "gas or Diesel."

### September Truck Freight Below Last Year

The volume of revenue freight transported by motor truck during September, while larger than in any other month this year, was 1.3 per cent under the September, 1939, figure, according to tonnage reports compiled by the American Trucking Associations. Comparable reports were received from 202 motor carriers in 38 states and the District of Columbia; the reporting carriers transported an aggregate of 1,267,929 tons in September, as against 1,243,714 tons in August, and 1,283,937 tons in September, 1939. The A. T. A. index figure, based on the 1936 monthly average tonnage as 100, stood at 141.77 for September, as compared with August's 139.82, and September, 1939's 143.56.

Approximately 72 per cent of all the freight transported during the month was reported by carriers of "general merchandise." The volume of general merchandise carried increased 2.7 per cent over August, but decreased 3.8 per cent under September of last year. Transporters of petroleum products, accounting for slightly more than 13 per cent of the total tonnage reported, showed a decrease of 4.8 per cent in September, as compared with August, but their volume represented an increase of 23.4 per cent over September of last year. Movement of new automobiles and trucks, constituting about 6 per cent of the total tonnage, increased 42.6 per cent over August, but represented a 21 per cent decrease under movements of September, 1939. The increase over August in this class was attributed to heavy movement of new 1941 models. Iron and steel products represented 5 per cent of the total reported tonnage. The volume of these commodities increased 7.3 per cent over August and 31.7 per cent over September, 1939.

Four per cent of the total tonnage reported was miscellaneous commodities, including tobacco, textile products, bottles, building materials, coal, cement and household goods. Tonnage in this class decreased 3.1 per cent under August, and 24 per cent under September of last year.

### A. T. A. Annual Meeting

"Plans for meshing the vast facilities of the nation's trucking industry into the machinery of national defense will highlight the seventh annual convention of American Trucking Associations, Inc., in Los Angeles, Calif., November 10 to 14," said a recent A. T. A. announcement.

"A tentative plan drawn up by A. T. A. for mobilization of equipment in the event

of an emergency is expected to be a major topic," the announcement added. "Under this plan, hundreds of trucks could be mobilized within a few hours at any one point."

The keynote address at the convention will be delivered by Frederick C. Horner, assistant to the Chairman of General Motors Corporation, and an advisor to Ralph Budd, head of the Transportation Section of the National Defense Advisory Commission. Mr. Horner will speak on "Motor Transportation and National Defense." "Trade barriers and their effect on highway transportation" will be the subject of an address by Paul T. Truitt, of the Commerce Department; Mr. Truitt is chairman of the Federal Interdepartmental Committee on Trade Barriers. "This address, too," says A. T. A., "is expected to touch on the vital defense angle, particularly in view of the fact that the trucking industry has warned that any obstructions impeding the free flow of goods between the states seriously may hamper the preparedness program."

Several other addresses will be delivered, and safety will be another major subject considered. Finals in the National Truck Driving Championship will be held November 13, with about 50 drivers, winners of state truck driving rodeos, competing.

Another feature, not held in previous conventions, will be a discussion by the wives of the attending truck operators of their part in the activities of the industry. Several women executives of trucking companies will participate in this conference.

Advance reservations are near the 1,000 mark, according to the announcement which adds that "a total of about 2,000 trucking company officials are expected to attend."

### A. A. R. Directors' Meeting

Directors of the Association of American Railroads, holding their regular monthly meeting in Washington, D. C., on October 25, discussed the equipment situation and considered various internal matters such as the Association's budget recommendations which will be submitted to member roads at the November 13 meeting in New York. Also, the board received the annual reports of the various A. A. R. departments which are likewise to be submitted to the member roads.

In their discussion of the equipment situation the directors had before them data showing that on October 1 the railroads had 1,510,476 serviceable cars, an increase of 61,468 over the 1,449,008 serviceable on October 1, 1939. The increase was due entirely to the reduction of 63,826 in the number of bad order cars; since the total ownership was 2,358 cars less on October 1, 1940, than on October 1, 1939. Meanwhile the car surplus as of October 1 was reported as 74,977 cars, an increase of 4,806 cars over the comparable figure for October 1, 1939; and on October 1, 1940, there were on order 16,892 freight cars and 215 locomotives. The aforementioned October 1 serviceable ownership of 1,510,476 cars was 11,491 cars less than was indicated in a survey last July which estimated that the October 1 serviceable ownership would be 1,521,967 cars.

With respect to the heavy demand for box cars, it is understood that the directors were shown indications of some easing in

certain sections; while the Car Service Division has taken all necessary action to assure a supply where heavy demands persist. The situation continues "rather tight" on gondolas for coal loading, but there has been no shortage reported, and the October 1 open-top surplus figure of 24,083 cars compared with October 1, 1939's 16,091. Moreover, there has been "a most excellent response" from shippers to the recent appeal for assistance in attaining efficient car utilization.

### Head-End Crew Killed When A. C. L. Train Derailed

The Atlantic Coast Line's Tampa Special, northbound, was derailed near Lake Alfred, Fla., (156 miles east of Tampa) at about 2:30 p. m., October 30, causing the death of the engineer and two firemen. It is reported that no serious injuries were sustained by passengers. The locomotive and first three head-end cars of the nine-car train overturned, while the fourth head-end car and one passenger car were derailed.

### I. C. C. Holds Conferences on Class Rate Investigation

A series of informal conferences with shippers, railroads, water carriers and truckers to determine the limits of a proposed class rate investigation was opened at Chicago on October 28 by Commissioners Clyde B. Aitchison, J. H. Alldredge and Walter M. Splawn of the Interstate Commerce Commission. No testimony is being taken. On the first day the commission propounded a list of questions to develop the viewpoint of interested parties. These were as follows:

Shall one or two class rate scales be provided for carload and I. C. I. traffic?

Shall class-rate treatment be regional or nationwide? To what extent shall regional rate differences be reflected in the rate scales?

Shall there be a basis for the construction of inter-territorial scales?

Shall the existing distinction between carload and less-than-carlot traffic be replaced by some other, such as carload and merchandise? If the latter, where shall the distinction be made?

Shall the discussions weigh the propriety of quantity class rates above or below the carload rate minima, or of class rates varying with quantity, weight, space occupied or revenue derived?

Shall quantity rates be standardized, if recognized, and given some degree of uniformity throughout the territories, and shall they be considered as within the field of classification or commodity-rate-making? If they are to be treated as matters of classification, shall they be treated by specific rule providing for an adjustment of the basic rate, according to the quantity shipped? What principles should govern the gradation of the quantities and rates in such cases?

J. V. Norman of the Southern Governors Freight Rate Conference expressed the opinion that a traffic study should be made before the hearings and that the I. C. C. should make actual traffic rate tests. A proposed test of rail and truck traffic was opposed by railroad representatives,



and approved by truck line spokesmen while shippers were divided.

On the second and concluding day, shippers presented a statement asking that the present phase of the investigation be confined to l. c. l. rates. The statement stressed the difference, from a transportation viewpoint, between carload and l. c. l. traffic.

The shippers also questioned a contention that carload rates should be related to merchandise rates. They also opposed a suggestion that the I. C. C. prepare a uniform classification and a uniform rate scale prior to the hearings and that it should employ these as the basis of a show-cause order.

### Hits Attempts to Make Highways and Waterways "Defense" Projects

The railroads' response to the national defense program at a time when efforts of others were directed to using "the present emergency as an excuse to siphon off billions of tax dollars into super-highways and needless channels down every trickle of a waterway," has presented to E. E. Norris, president of the Southern, "a contrast that should sharpen the appreciation of every loyal American for these railroads of ours." Mr. Norris spoke in that connection before the Atlanta (Ga.) Rotary Club on October 28 after having devoted a major part of the address to an appraisal of the Southern's value to the state of Georgia.

In the latter connection Mr. Norris employed a "net cost" formula, the "net cost" being what persons in Georgia paid to the Southern in 1939, less what the road spent in Georgia for materials, supplies, taxes and payrolls. On this basis the "net cost" was 27 cents out of every dollar of gross revenue. Thus for a dollar *net* the people of Georgia "shipped 30 tons of freight a distance of 100 miles"; and "for a dollar *net* you traveled 119 miles." But, Mr. Norris added, "don't think that this 27 cents is the Southern Railway's profit from its Georgia operations—payrolls, taxes and purchases are only *part* of the cost of running a railroad." "This," Mr. Norris also observed, "is truly 'cheap transportation'—so cheap that I would be willing to challenge any form of transportation to meet it by similar calculations of *net* figures.

Further along in his aforementioned remarks about the railroad response in the national defense emergency, Mr. Norris said: "We find national defense being used as a cloak to cover attacks on the right of the sovereign state to limit the size and weight of motor vehicles that pound its roads to dust; to tax, as it taxes its own business men, those who use the state's roads and streets for private profit; to equalize by law the competition between these outsiders and the state's own citizens engaged in comparable pursuits within its borders."

Meanwhile, as Mr. Norris put it: "There is *proof* of the railroads' proud boast that they stand squarely on their own feet and pay all their own way—in the traditional American, democratic way. Instead of running to the government for help, your railroads helped themselves first. Now they ask simply for more business *on merit*; more business to enable them to improve further their facilities and enlarge further their capacity; more business to make pos-

sible continued preparedness for any emergency that may arise." Previously, the president of the Southern had pointed out how the railroads have been buying, rebuilding and repairing cars and locomotives; enlarging and improving their terminals; and checking and rechecking every detail of their operations. "They mobilized and organized to do their full part in the defense of the American way of life," he added.

### More Reports on Motor Vehicle Size and Weight Study

The Interstate Commerce Commission this week made public two more preliminary reports which have been prepared by members of the staff of the Bureau of Motor Carriers from material gathered in the Ex Parte No. MC-15 investigation of the need for federal regulation of sizes and weights of motor vehicles. The present documents, labeled Report No. 4 and Report No. 5, were promised when the first three were made public a couple of months ago, as noted in the *Railway Age* of September 7, page 337.

Last week the commission postponed from November 10 until November 25 the deadline date for the filing of statements of comment and criticism on these preliminary reports. As has been pointed out in previous references to this probe, the mandate to make the investigation came in the Motor Carrier Act; but the anxious truck and highway interests had inserted into the Transportation Act of 1940 a provision authorizing and directing the commission to expedite the matter. The preliminary reports have been compiled under the general direction of Dr. C. S. Morgan and H. H. Kelly of the Bureau of Motor Carriers' staff.

Report No. 4 is entitled "Bridge and Road Facilities in Relation to Vehicle Characteristics." It is a 56-page document, prepared "in large part by Warner Tufts"; and "acknowledgment is made of the assistance on certain technical points given by the Public Roads Administration, but that agency is not necessarily to be considered as in agreement with all phases of the analysis." Data as to the physical characteristics of existing bridges and roads came from the Highway Planning Surveys and other files of P. R. A.

Report No. 5—Legal Aspects of Federal Regulation of the Sizes and Weights of Motor Vehicles—is a 31-page document. Its discussions lead the authors ("members of the staff of the Bureau of Motor Carriers") to the following conclusions: "If need exists for federal regulation of sizes and weights, Congress possesses power under the commerce clause of the Constitution to enact legislation providing for reasonable regulation. It is within the power of Congress to authorize the administrative body or bodies charged with the enforcement and administration of the law to exempt from its application some of the facilities or roads otherwise subject to the provisions of the act, and such facilities and roads so exempt are subject to the regulation of the state in which they lie."

The notice from I. C. C. Secretary Bartel which has been attached to each of the preliminary reports states that they have not been officially considered by the com-

mission. The general notice issued when the first three reports were made public stated that Report No. 5 would be an exception to the rule that persons participating in the preparation of the reports would be available for examination in the event the commission decides to hold hearings in the proceeding.

### How a Municipal Transport Company Competes with Private Capital

The voters of the state of Michigan will consider on November 5 a state-wide referendum which, if put through, will prevent the municipally-owned Detroit Street Railways from operating buses on the public highways beyond the limits of Detroit exempt from state regulation, safety regulations and normal fees and taxes. The Detroit Street Railways has for some time sought to operate its buses outside the corporate limits of the city under such exemptions. An amendment to the present state laws passed by the last legislature prevents its so doing. State voters have the chance on Election Day to nail that bar fast.

A six-page pamphlet which is being distributed by opponents of the operations now being carried on by the Detroit Railways—including privately-owned motor bus companies operating in territory near Detroit—gives short shrift to the charge of the Detroit Street Railways and the mayor of the city that the law is a blow to municipal ownership and a "deep, dark plot on the part of privately-owned motor buses to seize the Detroit Street Railways," by answering that "as a matter of plain fact" it is simply an amendment making more clear the intent of the legislature in a law that has been on the books for many years to put all common carriers using state highways under state regulation and taxation, and that it has nothing to do with municipal ownership. The pamphlet asks voters to write "yes" to the amendment to prevent any class of carrier from using or wearing out the highways without contributing to their construction and maintenance; to prevent the D. S. R. from acquiring unlimited authority to duplicate existing bus lines anywhere in the state regardless of public convenience and necessity or local or state approval and to uphold the principle that the municipally-owned transportation system must pay the same taxes and costs of government that are paid by any private corporation.

The pamphlet alleges that at present the D. S. R. doesn't pay state or federal taxes on its present city operations and that if it were subjected to the same levies as are paid by privately-operated bus companies it would pay more than \$1,400,000 per annum than at present. It also claims that in addition the D. S. R. received more than \$5,000,000 in federal grants in three years. Referring to a statement in the pamphlet to the effect that carrying of the amendment "will be a good start on the tax problem" as a possible inconvenience to the privately-owned carriers who are backing distribution of the pamphlet, W. D. Elder, of Ypsilanti, Mich., in a letter to the *Railway Age*, points out that such companies as the Eastern Michigan (Blue Goose Lines) are nevertheless backing a principle of fairness and equality. He writes: "The-

funny part of it is if their idea of fairness is carried out to its logical conclusion the wings of the blue goose might be clipped as well as those of the gander. Surely 'all these little fleas have other fleas to bite 'em and so on ad infinitum.'"

### P. & S. Division Selects Committees

Twenty-three committees with approximately 180 members have been selected to prepare reports for the next annual convention of the Purchases and Stores division, A. A. R. These committees are exclusive of the General, Advisory and Special Purchasing committees of the Division and its regional purchasing and stores committees. One new committee has been formed to study Diesel engine parts, and committee work on highway vehicles, shop made materials, fire and safety and terminal railway storekeeping has been revised. The personnel of the new standing committees includes 4 new chairmen and 17 new members. A. C. Mann, vice-president, Illinois Central, is chairman of the Division.

The subject committees and their chairmen are as follows:

*Purchasing and Stores Manual:* P. L. Grammer, assistant purchasing agent, Penna.  
*Material Classification:* E. G. Roberts, general storekeeper, C. R. I. & P.  
*Railroad Scrap:* R. E. Hamilton, supervisor reclamation, C. & O.  
*General Reclamation (Joint with Mechanical and Engineering Divisions):* E. R. Casey, superintendent of reclamation, U. P.  
*Material Records—Pricing-Inventory:* C. K. Reasor, assistant manager of stores, Erie.  
*Forest Products:* E. J. Clark, chief lumber inspector, C. B. & Q.  
*Purchasing Department Practices:* W. A. Clem, purchasing agent, Reading.  
*Stationery and Printing:* B. B. Melgaard, assistant to purchasing agent, C. M. St. P. & P.  
*Highway Vehicles:* C. R. Holmes, general storekeeper, A. T. & S. F.  
*Shop Made Materials:* G. D. Tombs, division storekeeper, I. C.  
*Fuel:* P. A. Hollar, fuel purchasing agent, Penna.  
*Fire and Safety:* H. J. Blum, general storekeeper, M-K-T.  
*Handling Facilities:* S. P. Warmack, general storekeeper, I-G. N.  
*Simplification and Standardization:* A. G. Follette, general material supervisor, Penna.  
*Terminal Railway Storekeeping:* A. N. Laret, assistant to chief purchasing officer, St. L-S. F.  
*Metric System:* D. C. Curtis, chief purchasing officer, C. M. St. P. & P.  
*Supplies for Dining Cars:* J. F. McAlpine, assistant purchasing agent, C. B. & Q.  
*Engineering Materials:* B. T. Adams, district storekeeper, I. C.  
*Standard Packages:* J. W. Hagerty, assistant purchasing agent, Penna.  
*Stores Practices and Records:* J. S. Genther, general storekeeper, L. & N. E.  
*Marking Tools, Materials, Etc.:* W. H. Lloyd, division storekeeper, C. R. I. & P.  
*Loss and Damage:* J. T. Kelly, general storekeeper, C. M. St. P. & P.  
*Diesel Engine Parts:* O. L. Browne, assistant to purchasing agent, A. C. L.  
*Regional Committees:* *Purchasing:* Eastern—F. S. Austin, purchasing agent, N. Y. C.; Southern—H. E. Warren, manager purchases and stores, G. M. & O.; Western—W. W. Kelly, general purchasing agent, A. T. & S. F.; Southwestern—J. H. Lauderdale, general purchasing agent, Mo. Pac.; Far Western—G. M. Betterton, purchasing agent, S. P.; *Stores:* Eastern—W. R. Culver, superintendent of stores, C. & O.; Southern—C. H. Murrin, general storekeeper, L. & N.; Western—J. T. Kelly, general storekeeper, C. M. St. P. & P.; Southwestern—C. L. Wake-man, general storekeeper, Wabash; Far Western—J. S. Gabriel, assistant purchasing agent and general storekeeper, D. & R. G. W.

### I. C. C. Notice on Water Carrier Certificates and Permits

Advice to water carriers with respect to the common-carrier certificate and contract-carrier permit provisions of the Interstate Commerce Act's new Part III is contained in a notice issued by the Interstate Com-

merce Commission's Division 1 on October 24. After quoting the pertinent provisions the notice calls attention to the fact that the prohibition against engaging in water transportation without a certificate or permit has no force and effect at least until January 1, 1941.

In the latter connection the commission has authority to postpone that date until April 1, 1942; but the notice said that a postponement is not the present intent of the commission, "although it is possible that need for such postponement may develop." Under the law, as the commission points out, a water carrier which is in operation on the effective date of the certificate and permit provisions may continue such operations until its application (which must be filed within 120 days) is passed upon by the commission. Meanwhile some carriers will have "grandfather-clause," the "grandfather" date being January 1, 1940.

Continuing, the notice states that the commission will "in due course" prescribe application forms; and carriers in doubt as to whether a certificate or permit is required for all or any part of their operations are advised that they will be able to protect all rights by including such operations within the applications. In this connection the commission's instructions "will make it clear that this can be done without prejudice to any contention that they may wish to make that a certificate or permit is not required for such operations." It will also be possible for a water carrier to apply for a certificate or a permit in the alternative, depending upon whether the commission ultimately finds it to be a common or contract carrier.

With respect to the exempt carriers, the commission notes that some can acquire that status only by action of the commission whereas others are specifically exempted by law. Exemption applications for the former will be prescribed "in due course," while those exempted by law are told that "it will be helpful in the administration of Part III if the commission is informed of all situations to which water carriers believe that such exemptions apply." Moreover, "for complete protection, water carriers believing that their transportation is in whole or in part exempted may desire to file applications . . . without prejudice to such claims of exemption."

### Says Roads Should Be Paid for Use of Packing Sheds

Examiner G. H. Mattingly has recommended in a proposed report an Interstate Commerce Commission finding that the failure of railroads, in certain instances, to charge any rental, or adequate rental, for the use by fruit and vegetable shippers of packing sheds in Texas and Louisiana is unlawful in violation of section 6(7) of the Interstate Commerce Act. The proposed report is in Part VII of the commission's general Ex Parte 104 investigation of Practices of Carriers Affecting Operating Revenues or Expenses.

The examiner found it impracticable to attempt to prescribe in detail the terms under which the railroads should lease the facilities running "the entire gamut of structures which it is possible to use for the preparation of vegetables for shipment,

ranging from well-constructed, substantial, completely enclosed buildings located in cities and towns, to crude uncovered platforms on country sidings." Also, the nature and extent of the use of the facilities vary widely. Thus Mr. Mattingly decided that all he could do was to lay down certain broad, general principles. In doing this he had in mind the view of the respondent railroads that the practices of different roads should be uniform under similar circumstances and conditions. That result the railroads had said could be achieved only under a mandatory order of the commission.

Generally, the examiner said that rents in individual producing areas should be upon a uniform basis per square foot of space occupied, arrived at upon an average basis; and that the rents should, so far as possible, be sufficient in the aggregate to yield a fair return upon the value of the facilities plus taxes. Mr. Mattingly would have this apply to existing facilities. Where new facilities are to be built the rental "should not be less than enough fully to cover a fair return on the value plus taxes, insurance"; and "no such new construction should be undertaken unless there is assurance, with all reasonable certainty, that rentals on the basis indicated can and will be collected."

At this time the examiner would have the commission merely call upon the carriers "to put their house in order" with respect to the rentals; if they fail to do so "consideration should be given to appropriate further action in the premises." Meanwhile he would require the railroads to submit to the commission annual statements describing each facility, its value, the rental basis, the extent to which it was used by shippers and rent collected.

### Special Car Order No. 42—An Absolute "Must"

Because of the "absolute necessity" for restricted utilization if the 3,257\* railroad-owned cars of the required dimensions are to take care of government truck loadings which will require upwards of 3,500 cars before December 31, and an additional 3,000 cars before April 30, 1941, the Car Service Division of the Association of American Railroads has issued Special Car Order No. 42, effective October 24 and applicable to 50-ft. box cars, type XA and XAF, with end doors 8 ft. 6 in. or wider. The government trucks are being shipped from the Pontiac, Mich., plant of the Yellow Coach & Manufacturing Company; and the notice announcing the special order says (with its own emphasis): "This loading must be protected."

The order directs, first, that the cars involved may be used for loading only with freight requiring the use of end doors. In the absence of such loading they must be returned promptly to owners empty in home route, except (a) if received loaded with government trucks and released on other than owners' rails, they must be returned to the loading road empty via the service route, and (b) if released from other lading on other than owners' rails, they may be applied on orders from any connection if for government truck loading. The order continues as follows:



"Each railroad receiving a car of the type covered by this order loaded with government trucks (either for an intermediate or terminating road haul) shall be responsible for immediately equalizing such receipt by a return empty movement of a car of the same size and type, either of system or foreign ownership, including cars returned empty under (a) above. Roads not owning such cars should endeavor to secure assistance from roads that do, particularly from car owners who participate in this traffic. Otherwise apply any car available that is covered by this order."

Attached to the order is a list of the ownerships of the 3,257\* cars to which the restrictions apply. A footnote on the list calls attention to the fact that the 200 Grand Trunk Western cars involved are covered also "by more restrictive provisions of Special Car Order No. 40, dated September 4, 1940, which is still in effect."

\* Later corrected to 3,228 cars in Supplement No. 1 to Special Car Order No. 42, issued on October 29.

## Wheeler & Truman Lay More Blame

(Continued from page 650)

sas City Southern stock was a wasteful speculation by a railroad already on the brink of bankruptcy. Legislation is urgently needed to end such wastes of railroad money in outside stock adventures."

The report also declares that the role of holding companies in this transaction indicates the need for legislation abolishing railroad holding companies entirely, or subjecting them to effective federal regulation. "The use of a wholly-owned subsidiary to circumvent and evade state laws," say Senators Wheeler and Truman, "demonstrates that legislation is needed to outlaw such legalistic subterfuges by eliminating wholly-owned subsidiaries wherever they are found to serve no wholesome or useful purpose, and by extending regulation over the rest sufficient to protect the public interest." As in the previous report a recommendation is made for the establishment of a special railroad reorganization court.

In part 16 the two senators allege that the Chesapeake & Ohio's \$15,000,000 preference stock issue of 1937 violated state laws in order to avoid federal taxes and to benefit a Van Sweringen holding company (the Chesapeake Corporation). Because, as the senators allege, the issue violated Virginia laws, since it was not consented to by 90 per cent of the stockholders, it is contended that the company violated not only that state's statute, but also refrained from giving the Interstate Commerce Commission information to this effect. The railroad, says the report, selected its own law firm which had worked on the preference stock issue to submit an opinion to the commission vouching for the validity of the issue. These lawyers, it is contended, were passing upon their own actions.

The report also alleges that although the C. & O. knew that the issue was not valid, yet it remained silent on this matter for six months, thereby barring all action by stockholders to challenge its legality under the provisions of the Virginia statute. It

also points out that acting on the advice of the railroad and its bankers and lawyers, the New York Stock Exchange granted a listing of the stock, despite the fact that it did not comply with the Virginia law.

The report concludes with the observation that "The manner in which a railroad can be made to serve holding company interests, as described in this report, demonstrates that legislation is urgently needed abolishing such holding companies altogether or subjecting them to effective federal regulation."

Part 17, in the words of the committee, "describes how from 1924 to 1927 officials of the Delaware & Hudson, intent upon building up a new railroad system in the Eastern region which would rival the four major eastern systems then in existence, purchased on margin some \$40,000,000 of stocks in the Lehigh Valley and Wabash railroads. The purchases were made in part for the account of the Delaware & Hudson, prior to any authorization by the directors of that railroad; and in part for the account of Delaware & Hudson subsidiaries, the directors of which never authorized such stock purchases."

The report makes the charge that railroads and railroad subsidiaries in the D. & H. system "falsified their books, violated the regulations of the Interstate Commerce Commission, submitted false or misleading balance sheets to the New York Stock Exchange and to the public, concealed a tremendous write-up of assets from bond purchasers, and in general painted a picture of financial transactions to government agencies and to the public which bore remarkably little resemblance to the facts." All these charges refer to the abovementioned stock purchases by the D. & H.

"This whole amazing set of transactions," concludes the committee report, "reveals the need for effective enforcement of railroad accounting regulations, and for a reform of the system by which railroads are able to accomplish secretly through subsidiaries what they cannot legally accomplish in their own names."

## Petalcingo-San Marcos Line Opened

The 90 kilometers of newly constructed line from Petalcingo, Puebla to San Marcos was opened to traffic on October 16. This is part of a line being constructed from Ixcaquixtla, Puebla to Chacahua, Oaxaca by the Department of Communications of Mexico at a cost of 6,000,000 pesos. The road is being operated by the Mexican Railway.

## New York Fair Closes; Equipment Rolls Homeward

The big New York World's Fair closed for all time on October 27, thus ending a two-year exposition in which the railroad industry played a prominent part both in transporting visitors to the gates and through exhibits and shows put on by the industry on a 17-acre site, the largest single exhibit space at the Fair. Immediately after the close crews began to load equipment for routing back home. Some 20 locomotives and more than double that number of cars appeared in the opera-pageant "Railroads on Parade" alone, all of which must be sent back to owning roads on flat

cars or under their own steam, as in the case of the "William Crooks" and train of the Great Northern. The track exhibit of modern equipment contained more than 50 pieces of rolling stock, most of which is required by the owning carriers to meet traffic demands, which is being sent homeward as quickly as possible.

Exceptions are to be made, however, in the case of Italian and British equipment on the track exhibit which must remain in the United States, due to the impossibility of ocean transportation during the war. The property of the Italian State Railways, comprising two electric multiple-unit trains, a gasoline-powered rail car and a special highway truck for conveying freight cars, are expected to be stored at a nearby railroad shop, probably the Van Nest shops of the New York, New Haven & Hartford in New York. The "Coronation Scot" of the London Midland & Scottish, comprising a steam locomotive and eight cars, will be stored in Baltimore & Ohio facilities at Baltimore, Md.

The Pennsylvania reports that its streamlined steam locomotive No. 3768, which appeared in "Railroads on Parade," left the Fair on October 7 for Altoona, Pa., where it is to be "screened" for scenes in Hal Roach's new motion picture "Broadway Limited." The road's streamlined electric locomotive No. 4896 was placed in service shortly after October 27 between New York and Harrisburg, Pa., while No. 6100—the new 6-4-4-6 type locomotive built especially for exhibition at the fair—is being removed from its treadmill near the Railroad building and will be assigned to regular service at the Western end of the P. R. R. system. The old "John Bull" is destined for a resting place at Smithsonian Institution at Washington, D. C., while its passenger coach will go into storage at Kearny, N. J.

The last World's Fair shuttle train of the Long Island left World's Fair station for Pennsylvania station at 2:50 a. m. on Monday, October 28, but the road is continuing to stop its regular Port Washington branch trains at the World's Fair Station for those having business there. The modernistic World's Fair station will be taken down within 90 days and the portable transformer, temporary block signal tower and additional track facilities will be removed as soon as possible. Present arrangements with the New York City Park Department—which will assume jurisdiction over the Fair site—call for the re-arrangement of platforms to create a permanent station to serve what will be called Flushing Meadow Park. In this connection stairs will be built to the present rapid transit ramp which will remain in use after the demolition of the exposition buildings.

The Long Island carried a total of 9,563,750 passengers to and from World's Fair station during the 1940 season, as compared with 15,727,906 during the Fair of 1939, which was 15 days greater in length. Vice-President George LeBoutillier, explaining these figures, stated: "This year we carried one out of every five individual persons visiting the grounds, including those admitted on passes and working permits, whereas in 1939 our ratio was one out of every four. This drop may be attributed to the larger numbers of New

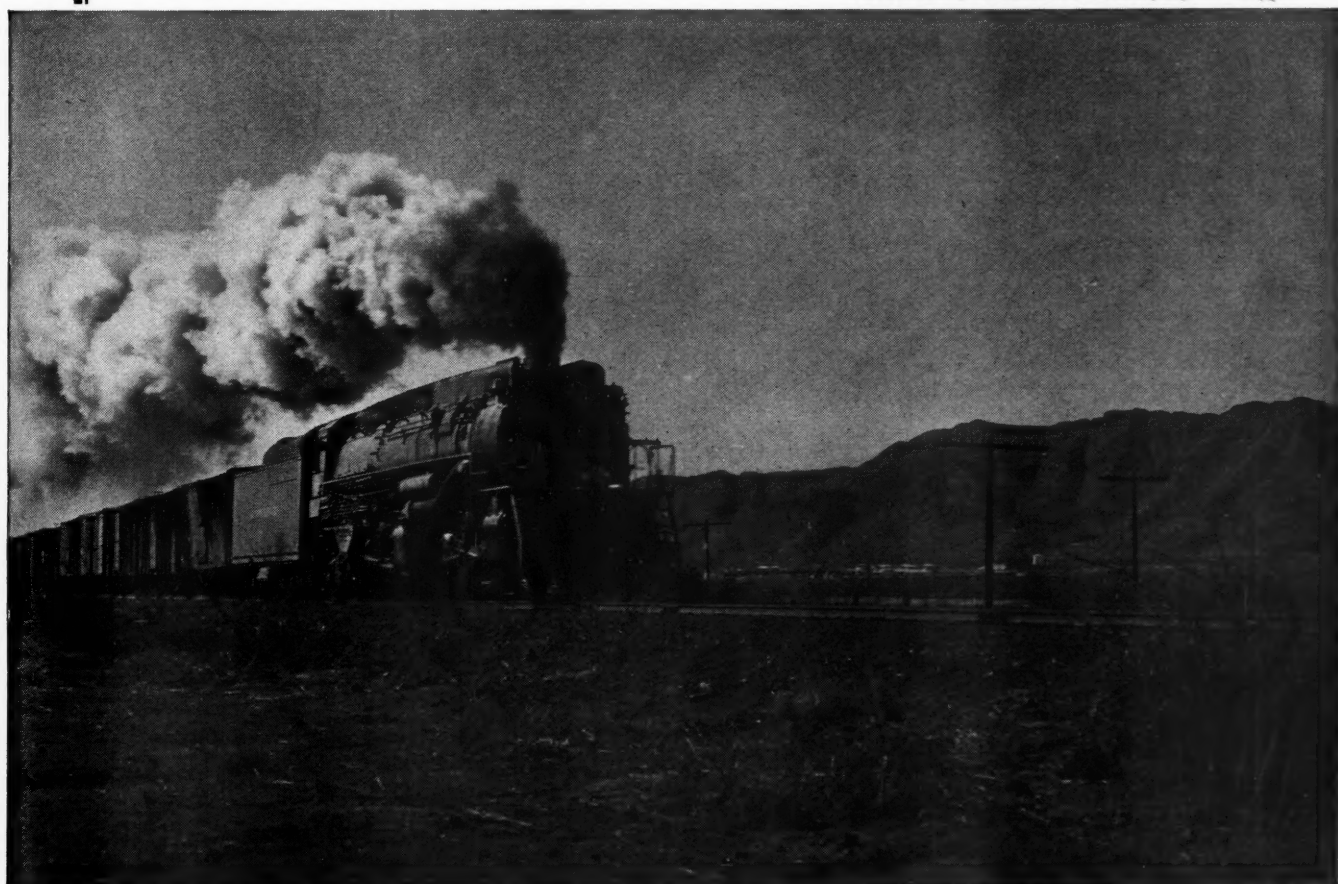
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# A Locomotive ON ORDER Can't Haul Freight

As traffic continues to rise the demand for modern, superpower locomotives is becoming increasingly acute. Order your new locomotives NOW, and be prepared with engines IN THE ROUNDHOUSE when freight demands exceed the capacities of your older engines.

Lima is ready to supply the railroads with Modern Power . . . . power capable of moving the heavier loads at the higher speeds that will be demanded.

*Photo courtesy Southern Pacific Company*



LIMA LOCOMOTIVE WORKS, INCORPORATED, LIMA, OHIO





York city residents who were attracted to the exposition by its lower prices and reduced admission charges, and who could more conveniently reach the Fair by one of the other methods of transportation. Also, the great numbers of school children carried to the Fair at reduced rates over the municipally-owned subway systems was an important factor in cutting our percentage."

### Rehabilitation of Tehuantepec Railway Considered

A plan for the expenditure of \$10,000,000 to rehabilitate the Tehuantepec Railway, extending from Salina Cruz, Oaxaca on the Pacific Ocean to Puerto Mexico, Veracruz on the Atlantic Ocean, is being considered by American interests and the Mexican government. This line was purchased by the Mexican government and has been operated at a loss since the opening of the Panama canal.

### I. C. C. Still Vexed at Sioux Sidings

(Continued from page 651)

sire to handle all of their traffic at Sioux City over public team tracks rather than private tracks it would be necessary, after reasonable notice to that effect, for the line-haul carriers to provide the facilities needed either directly or through their agent, the Sioux City Terminal Railway Company, respondent herein. The record before us does not indicate that the petitioners have notified the line-haul carriers of any such intention and there is no requirement of law that, before the petitioners can be made to bear the expense of private tracks, the line-haul carriers must prove that they have sufficient public team-track space to handle all of this industry traffic if it were suddenly diverted to the team tracks.

"Petitioners argue that they desire no greater use of the private tracks than that required by any patron of public team tracks. This is not compatible with well-recognized practice. The user of the public team track may not specify where his car shall be set; he must accept it wherever the carrier chooses to place it; he must share the track with other shippers; and it not infrequently happens that the carrier shifts the car from one location to another during the loading or unloading. In other words, the carrier retains complete control of the team track and regulates its use in consonance with its obligations to all the patrons of such tracks. Of the private industry track the shipper retains primary control, directing the exact point at which cars are to be placed, and the carrier may use the track for purposes of its own only to the extent that it does not interfere with the business of the industry. . . . It is apparent that when a railroad provides and maintains at its own expense a private industry siding of the kind here involved it furnishes more than the equivalent of team-track facilities.

"It is contended that carriers have an alternative right either to compel shippers to bring their freight to a public team track or to build a separate track to each shipper's plant and supply no team track what-

ever. Even if that be conceded to be correct, it does not negative the legality of the finding because this is not a case where the carriers do not supply team tracks, and no demand has been made by petitioners for the construction by respondent of additional team-track facilities.

"Petitioners urge that the finding is tantamount to an authorization to abandon spur tracks and that we have no such power. There is, we believe, no foundation for this view. We have not authorized any abandonment and, so far as we know, respondent has no intention to abandon the tracks serving the industries but will continue to perform switching over those tracks. The sole result of the finding will be to transfer from respondent to the industries the ownership and maintenance costs of tracks exclusively used by the industries."

From the above the majority report followed through to the following amplification of the finding: "We further find that under efficient and economical management respondent would not provide and maintain within the plant areas of Cudahy and Armour private sidings for the loading and unloading of the traffic of those shippers; that to do so is a device for refunding or remitting a portion of the tariff charges and an extension of privileges or facilities not authorized in the line-haul tariffs and for which no compensation is included in the line-haul rates, in contravention of section 6(7) of the Interstate Commerce Act." The amplification comes in the language which specifically identifies the violation as a refund of a portion of the tariff charges, etc.

Chairman Eastman's concurring expression called attention to the fact that the situation now found to be in violation of the act had prevailed for years without criticism from the commission; it added that "there are a multitude of like situations all over the country." He thinks that some shippers affected might now be disposed to take deliveries on public team tracks; and thus he does not believe that the majority should have attached significance to the fact that no notice of a desire for public team track deliveries had been served upon the Terminal Railway by Cudahy and Armour. Rather, the chairman thinks those companies should be given about 90 days to think things over and serve such notice if they so desire.

### Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, 350 Fifth Ave., New York, N. Y.  
ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill.  
AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R. M. & O. R. R., 327 S. La Salle St., Chicago, Ill.  
AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431 Railway Exchange Bldg., St. Louis, Mo.  
AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y.  
AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill. Annual meeting, June 3-5, 1941, Chicago, Ill.  
AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.  
AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill.  
AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.  
AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—E. G. Reed, Union Pacific R. R., 1416 Dodge St., Omaha, Neb.  
AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.  
AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. Bldg., Baltimore, Md.  
AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C. M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.  
AMERICAN SHORT LINE RAILROAD ASSOCIATION.—J. H. Hunt, Tower Bldg., Washington, D. C. Annual meeting, November 11-12, 1940, Hotel Morrison, Chicago, Ill.  
AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y. Annual meeting, December 2-6, 1940, New York, N. Y.  
RAILROAD DIVISION.—C. L. Combes, *Railway Age*, 30 Church St., New York, N. Y.  
AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y.  
AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, February 4-6, 1941, Brown Hotel, Louisville, Ky.  
ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington, D. C.  
Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington, D. C.  
Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.  
Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.  
Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.  
Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York, N. Y.  
Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.  
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.  
Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.  
Safety Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.  
Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York, N. Y.  
Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.  
Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 11-13, 1941, Palmer House, Chicago, Ill.  
Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill.  
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.  
Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.  
Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill.  
Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.  
Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.  
Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington, D. C.  
Car-Service Division.—E. W. Coughlin, Transportation Bldg., Washington, D. C.  
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.  
Accounting Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1941, Denver, Colo.  
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1941, Colorado Springs, Colo.  
Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.  
ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, 1941, Denver, Colo.  
BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—R. Y. Barham, Armco Railroad Sales Company, 310 South Michigan Ave., Chicago, Ill. Meets with American Railway Bridge and Building Association.

# Equipment and Supplies

## LOCOMOTIVES

THE KANSAS CITY TERMINAL has ordered two 1,000 hp. and one 660 hp. Diesel-electric locomotives from the American Locomotive Company.

THE ATCHISON, TOPEKA & SANTA FE has ordered two 4000-hp. Diesel-electric passenger locomotives placing one each with the Electro-Motive Corp. and the American Locomotive Co.

THE SPOKANE, PORTLAND & SEATTLE has accepted delivery of four 1,000 hp. Diesel-electric switching locomotives, two of which were built by the American Locomotive Company and two by the Baldwin Locomotive Works.

THE STATE OF SAO PAULO, BRAZIL, has ordered 20 electric passenger and freight locomotives from the Electrical Export Corporation, a joint subsidiary of the General Electric Corporation and Westinghouse Electric & Manufacturing Co.

THE CHICAGO, ROCK ISLAND & PACIFIC has been authorized by the federal district court to purchase four Diesel-electric locomotives from the American Locomotive Company. Two, of 2,000 hp. each, will be used on the Arizona Limited, an all-Pullman streamlined train which the Rock Island and the Southern Pacific will place in service between Chicago and Phoenix, Ariz., on December 15, as reported in the *Railway Age* of October 5, page 489. The other two, of 1,000 hp. each, will be used in mixed train service on the branch line between Albert Lea, Minn., and Sioux Falls, S. D., via Estherville, Iowa.

THE ILLINOIS CENTRAL has undertaken a locomotive-rebuilding and modernization program at a cost of \$4,449,900. Of this amount, \$2,003,400 is for the modernization and repair of 84 locomotives of the 2-10-2 type. Twenty-five of these have been completed and the balance have been scheduled for this year and next. A total of \$883,500 is to go for the modernization of 31 locomotives of the 2-8-4 type, of which 21 have been completed and 12 are scheduled for 1941. A total of \$487,500 is allotted for the modernization of 25 Mikado type locomotives, of which one is completed. A total of \$295,500 is to go for the assembly of parts into 15 locomotives of the 2-10-0 type, of which 14 have been completed. A total of \$780,000 is for the conversion of 13 locomotives, the work on which has already been completed.

## FREIGHT CARS

THE ERIE has ordered 1,150 freight cars as follows:

250 hopper cars from Pullman Standard Car Manufacturing Company.

250 hopper cars from General American Transportation Corporation.

200 box cars from American Car & Foundry Co.

100 box cars from Magor Car Company.

250 mill type gondola cars from Greenville Steel Car Company.

100 furniture cars from American Car & Foundry Co.

Inquiry for this equipment was reported in the *Railway Age* of October 12, page 526.

THE ERIE is inquiring for 70 caboose cars.

THE DULUTH, MISSABE & IRON RANGE is inquiring for 30 ballast cars.

THE UNITED STATES NAVY has awarded a contract for 15 flat cars of 50 tons' capacity to the American Car & Foundry Co.

THE DENVER & RIO GRANDE WESTERN has ordered 28 freight cars from its own shops.

THE ATCHISON, TOPEKA & SANTA FE has ordered 2,000 box cars from the Pullman-Standard Car Manufacturing Co. Inquiry for this equipment was reported in the *Railway Age* of October 12.

THE WAR DEPARTMENT, OFFICE OF CHIEF OF ENGINEERS, has awarded a contract for 260 10,000-gal. gasoline tank cars at a total cost of \$679,640 to the American Car & Foundry Co.

## PASSENGER CARS

THE ATCHISON, TOPEKA & SANTA FE has ordered 20 stainless steel lightweight passenger train cars from the Edward G. Budd Manufacturing Co.

THE STATE OF SAO PAULO, BRAZIL, has ordered four three-coach multiple unit trains from the Electrical Export Corporation, a joint subsidiary of the General Electric Corporation and Westinghouse Electric & Manufacturing Co.

## MOTOR VEHICLES

THE MISSOURI PACIFIC TRANSPORTATION COMPANY, subsidiary of the Missouri Pacific, is asking for bids on six new 37-passenger, air-conditioned Diesel-propelled busses. The Missouri Pacific has received court authorization to advance \$105,000 for the purchase.

## IRON AND STEEL

THE ATCHISON, TOPEKA & SANTA FE has ordered 18,000 tons of 112-lb Rails from the Colorado Fuel & Iron Co.

THE ERIE has ordered 15,000 tons of rails placing 12,800 tons with the Carnegie-Illinois Steel Corporation and 2,200 tons with the Bethlehem Steel Company.

THE SOUTHERN PACIFIC has placed orders for 40,000 tons of rails with the Columbia Steel Company, the Bethlehem Steel Company and the Colorado Fuel & Iron Company.

THE MISSOURI PACIFIC is inquiring for 31,750 tons of rails and accessories, purchase of which was authorized in a federal

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CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcl Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, Mo.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & O., Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 8238 So. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—Mrs. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St. (11th floor), New York, N. Y.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—J. E. Goodwin, Gen. Foreman, Loco. Dept., Missouri Pacific R. R., No. Little Rock, (P. O. Little Rock), Ark.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, New Post Office Bldg., Washington, D. C. Annual meeting, December 10-12, 1940, Miami-Biltmore Hotel, Miami, Fla.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Thursday of each month, except June, July, August September and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, and second Friday of each alternate month at Hotel Hayward, Los Angeles.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual meeting, November 14, 1940, Hotel Commodore, New York, N. Y.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1647 Oliver Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—F. O. Whiteman, Room 332, Dearborn Station, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E. Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga. Ry., Savannah, Ga.

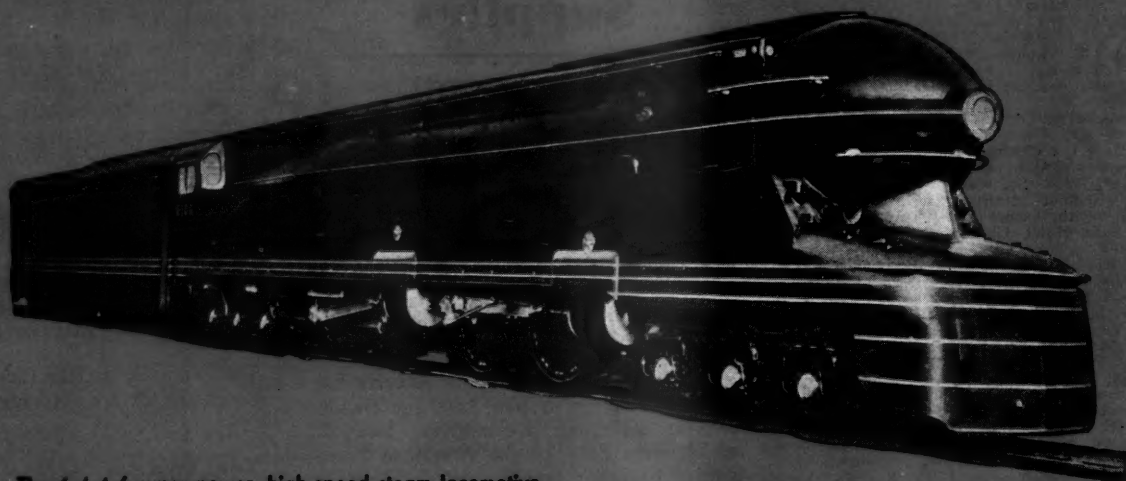
TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas Q. and C. Company, 59 E. Van Buren St., Chicago, Ill.

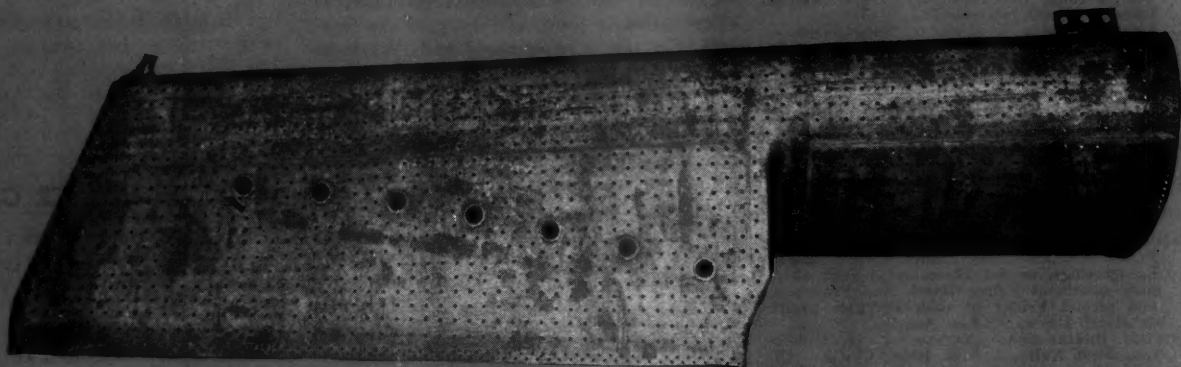
UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y.

WESTERN RAILWAY CLUB.—W. L. Fox (Executive Secretary), Room 822, 310 South Michigan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.





The 6-4-4-6 super-power, high-speed steam locomotive which was on display at the American Railroad Exhibit of the 1939 and 1940 New York World's Fair. This locomotive is equipped with Security Circulators.



Exterior view of firebox of American Railroads' 6-4-4-6 super-power, high-speed steam locomotive showing positioning of Security Circulators.

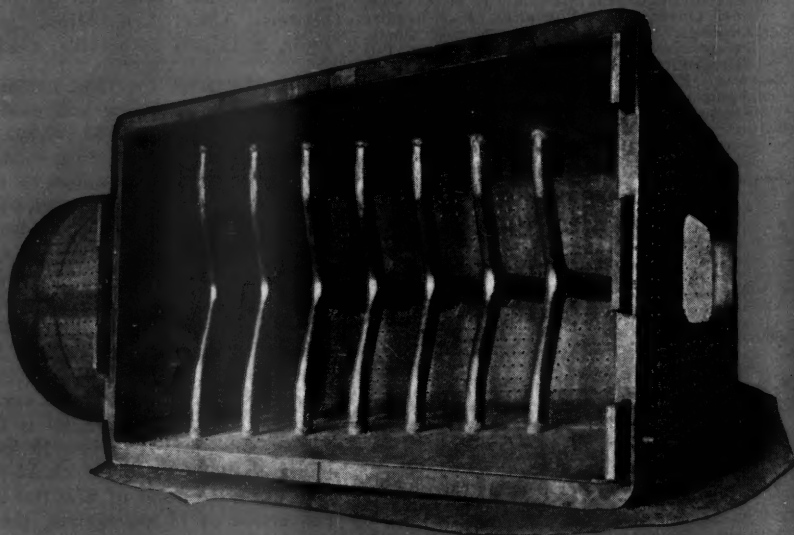


Illustration of interior of firebox of American Railroads' 6-4-4-6 locomotive, showing installation of Security Circulators.

# AMERICAN ARCH

## *Security Circulator Division*

*over 7 million miles*  
(IN THE FIRST SIX YEARS)

**OF SUCCESSFUL OPERATION  
PROVE SECURITY CIRCULATORS  
GIVE BETTER COMBUSTION FOR  
YOUR LOCOMOTIVES**

**T**HE demand for greater boiler horsepower brought about the larger firebox, which in turn presented a problem in arch brick support. To meet this condition The American Arch Company, in its continuous study for the improvement of combustion, developed the Security Circulator. While the original object of improved support was achieved, many other benefits have accrued.

Notable among these is the reduced cost of maintaining the arch as compared with other forms of arch brick support. Boiler maintenance is also lessened due to the reduction of honeycombing and cinder cutting. As for the Security Circulator itself, experience has shown a gratifyingly low maintenance cost.

The 564 Security Circulators, that have been installed on 115 locomotives during the last six years, have attained a record of over 7,000,000 engine miles of service, in which their performance has been thoroughly proved.

**COMPANY, INC.**  
NEW YORK CHICAGO



court order at an estimated cost of \$2,263,050. Ninety-pound and 112-lb. rails will be used to replace 75 lb. and 90 lb. rails in 185 miles of main line track.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC has ordered 20,000 tons of 112 and 131-lb. rails from the Carnegie-Illinois Steel Corporation and the Inland Steel Company.

### SIGNALING

THE LIMA LOCOMOTIVE WORKS has placed an order with the General Railway Signal Company for 15 complete sets of intermittent inductive auto-manual train control engine equipments for New York Central locomotives.

THE AMERICAN LOCOMOTIVE COMPANY has placed an order with the General Railway Signal Company for 35 complete sets of intermittent inductive auto-manual train control engine equipment for New York Central locomotives.

THE KANSAS CITY SOUTHERN has placed an order with the General Railway Signal Company covering an automatic interlocking at Cedar Grove, La. This replaces mechanical interlocking at the crossing of the Kansas City Southern and the Texas & Pacific. The order includes four type SA signals for use on the Texas & Pacific, necessary relays, and a factory-wired relay case. Existing Model 2A signals are to be used on the Kansas City Southern.

THE MISSOURI PACIFIC has placed an order with the General Railway Signal Company covering materials for a Coded Type F, Class M, central train control system for installation between Osage, Mo., and S. R. Jct., a distance of approximately 12 miles. The control machine, located at Jefferson City, Mo., has 15 working levers. Apparatus includes 8 Model 5D low voltage switch machines, 16 type G color light signals, and 3 welded steel housings, along with associated relays and other apparatus.

THE MISSOURI PACIFIC has placed an order with the General Railway Signal Company covering materials for a Coded Type F, Class M, central train control system for installation between Hot Springs, Ark., and Etta, a distance of approximately 27 miles. The control machine, to be located at Malvern, has 29 working levers. Apparatus includes 8 Model 5D low voltage switch machines, 31 type G color light signals, 7 welded steel housings, 3 cases, relays and other apparatus.

THE TERMINAL RAILROAD ASSOCIATION OF ST. LOUIS has placed an order with the General Railway Signal Company covering signaling materials at the double-track crossing of the Wabash and the Merchants' Bridge approach of the T. R. R. A. of St. Louis at May street, St. Louis. Apparatus includes 13 semi-automatic signals, 12 Model 7 switch circuit controllers, together with a central traffic control type control machine, and a steel housing, wired complete with all associated relays and other materials for the installation.

## Supply Trade

William Harty, chairman of the board of the **Canadian Locomotive Company, Ltd.**, of Kingston, Ont., has been elected a director of the **Canadian Car and Foundry Company, Ltd.**, of Montreal, Quebec.

R. S. Clingan, formerly of the **Republic Steel Corporation**, has been appointed Chicago district manager of the **Copperweld Steel Company**, Warren, Ohio.

Henry H. Timken, Jr., has been elected chairman of the board of the **Timken Roller Bearing Company**, Canton, Ohio, succeeding his father, H. H. Timken, whose death was reported in the *Railway Age* of October 19, page 570.

George A. Blackmore, president of the **Westinghouse Air Brake Company** since 1936, has been elected by the board of directors to fill the additional office of chairman of the board, succeeding **Charles A. Rowan**, whose recent death was reported in the *Railway Age* of September 21, page 423.

W. M. Black, vice-president of the American Manganese Steel division of the **American Brake Shoe & Foundry Co.**, with headquarters at Chicago Heights, Ill., has been elected president with the same headquarters. W. E. Crocombe, who for-



W. M. Black

merly headed this division, continues as president of the American Forge division. Mr. Black has been with American Manganese since 1912, with the exception of the war years when he served as a lieutenant in the ordnance department of the United States army. He was appointed general sales manager in 1934 and was elected vice-president in 1935.

### OBITUARY

L. F. Howard, formerly chief engineer of the Union Switch and Signal Company, died recently at the age of 67 at his home in Edgewood, Pa. Mr. Howard was born at Chicopee, Mass., on July 4, 1873, and graduated from Massachusetts Insti-

tute of Technology in 1895. After graduation he began his business career in experimental work in mechanical and civil engineering in the U. S. Lighthouse Dept. In 1899 he took a position in the electrical engineer's office of the Boston Elevated railway, and in 1902 he was promoted to superintendent of signals, telephones, telegraphs and auxiliary electrical apparatus for this company. In 1905 he was appointed assistant electrical engineer for the Union Switch & Signal Company and served in this capacity until 1907, when he was promoted to electrical engineer. In 1911 he was promoted to chief engineer, which position he held until January 31, 1937, when he retired because of poor health.

## Construction

ATCHISON, TOPEKA & SANTA FE.—Extensive improvement work has been started on various sections of the line between Los Angeles, Cal., and San Diego. This work includes the construction of a steel bridge at San Onofre, Cal., the reduction of curves at various locations, the replacement of 62 miles of 90-lb. rail with 112-lb. rail and the raising of the grade 4 ft., for a distance of three miles at Sorrento, Cal., to protect the line from washouts.

BIRMINGHAM SOUTHERN.—A contract has been awarded Harrison Richardson, Birmingham, Ala., for the construction of a 40-ft. by 400-ft. addition to the freight station at Birmingham. The addition will be of steel and brick construction and will have a floor of wood blocks on a concrete base. The total cost of the improvement, including track work, will be approximately \$140,000.

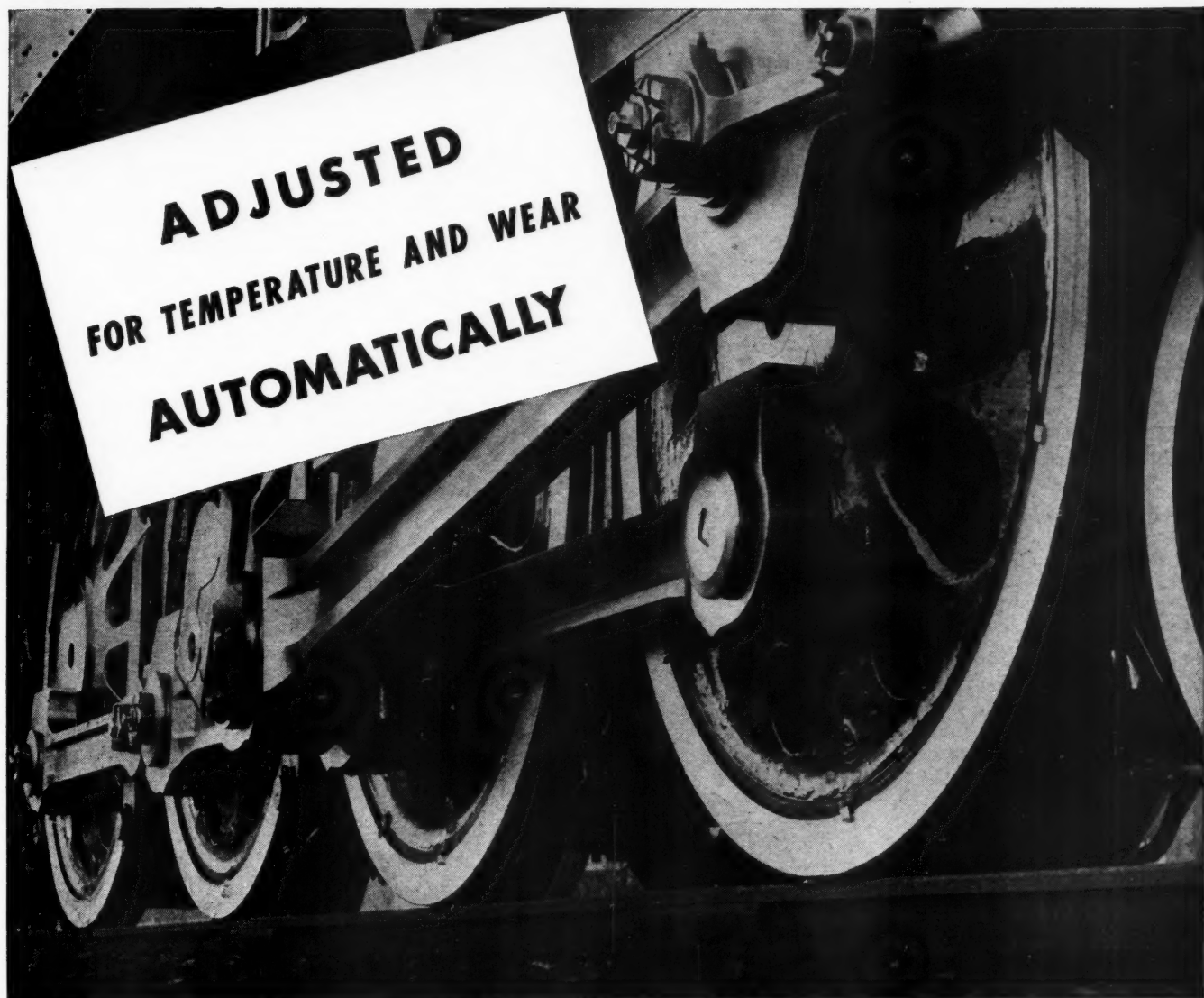
CHESAPEAKE & OHIO.—Contracts have been awarded to the Sturm & Dillard Co., Columbus, Ohio, for additional yard track facilities at Raleigh, W. Va., at estimated cost of \$87,000 and to the Mountain Construction Company, Huntington, W. Va., for additional mine tracks at Holden and Whitman, W. Va., at estimated cost of \$58,000. Request for bids on this latter project was reported in the *Railway Age* of July 13, page 94.

The following projects, work on which will be performed by company's own forces, have been authorized: Improvement of sprinkler systems on coal dumpers at Presque Isle, Ohio, at estimated cost of \$135,000; subdrainage and rock backfill at Concord, Ky., at estimated cost of \$110,745; rebuilding of column pedestals and other repairs to viaduct at Richmond, Va., at estimated cost of \$59,000; conversion of tunnel at Gauley, W. Va., into an open cut at estimated cost of \$59,000; and construction of additional mine tracks at Crab Orchard, W. Va., at estimated cost of \$42,765.

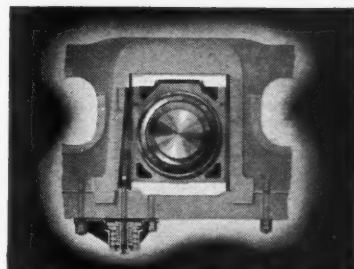
Bids will be requested for construction of a viaduct and team track facilities at Cincinnati, Ohio, at estimated cost of \$226,000 and for construction of an additional unit to the company hospital at Huntington, W. Va., at estimated cost of \$172,000.

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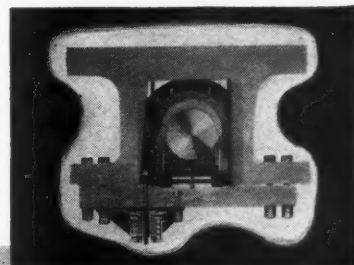
**ADJUSTED  
FOR TEMPERATURE AND WEAR  
AUTOMATICALLY**



Variations in the driving box temperature, which in some instances are as much as 250° in short periods of time, no longer affect the fit of these driving box wedges. This ever-present problem has been effectively solved by the application of Franklin Automatic Compensators and Snubbers. Now, this locomotive leaves the roundhouse with a snug fit; as the driving box becomes heated the wedge is *automatically* pushed down, keeping a constant, pre-determined adjustment at all times. As the driving box cools, the wedge *automatically* compensates for the contraction. In addition, abnormal shocks are taken care of by a heavy outer spring that acts as a cushion. » » » For constant, accurate adjustment . . . easier riding, prevention of pounds . . . at any temperature . . . apply Franklin Automatic Compensators and Snubbers.



ABOVE: Franklin Automatic Compensator and Snubber for Roller Bearing Driving Box application. BELOW: Franklin Automatic Compensator and Snubber for Friction Bearing Driving Box application.



**FRANKLIN RAILWAY SUPPLY COMPANY, INC.**

NEW YORK

CHICAGO

MONTREAL



## Financial

**ATLANTIC COAST LINE-SEABOARD AIR LINE.—Bonds of the Tampa Union Station.**—The Tampa Union Station has been authorized to issue \$225,000 of first mortgage four per cent bonds, to be sold at par and accrued interest, and the proceeds used to retire a like amount of outstanding first mortgage five per cent bonds. The new bonds will mature October 1, 1958, while the bonds to be retired will mature November 1.

At the same time Division 4 authorized these two railroads to assume liability, jointly and severally, as guarantors, for the payment of the principal and interest of the bonds.

**BALTIMORE & OHIO.—Bonds.**—Acting on this company's request, Division 4 of the Interstate Commerce Commission has dismissed its application for authority to issue and pledge \$655,000 of refunding and general mortgage six per cent bonds, series E.

**BALTIMORE & OHIO.—Equipment Trust Certificates.**—The Baltimore & Ohio is requesting bids by November 13 for the purchase of \$4,750,000 of equipment trust certificates, Series K, to mature in ten equal annual installments December 1, 1940, to 1950, inclusive. Subject to the approval of the Interstate Commerce Commission, the certificates will be sold to provide not more than 80 per cent of the cost of 2,000 new freight cars, orders for which have been reported in the *Railway Age*.

**BATH & HAMMONDSPORT.—Certificate of Unsound Financial Condition.**—Division 4 of the Interstate Commerce Commission has found that this company was in unsound financial condition as of September 30, 1940, and has issued a certificate to that effect. The certificate was granted under authority of section 22 (b) (9) of the Internal Revenue Code as amended by the Revenue Act of 1939. Under this provision a carrier, if it is declared by the commission to be in unsound financial condition, can purchase its outstanding bonds without including in its gross income the difference between the par value of the bonds and the purchase price.

**CHICAGO & EASTERN ILLINOIS.—Reorganization.**—Division 4 of the Interstate Commerce Commission has approved the maximum limits of reasonable expenses to be incurred by the reorganization managers for services of mortgage trustees and agents in connection with the proceedings and plan of reorganization of this company under section 77 of the Bankruptcy Act. Division 4 fixed a maximum limit of \$75,000 in the event that only definitive bonds and stock certificates are issued, and \$95,000 in the event that both temporary and definitive bonds and stock certificates are issued. The action was taken on a petition filed by the reorganization managers of the road, Kenneth D. Steere, Carrol M. Shanks, and John W. Barriger, III.

At the same time Division 4 has authorized the new company, the Chicago & Eastern Illinois Railroad Company, to acquire the property of the old company, the Chi-

cago & Eastern Illinois Railway Company, and issue the following new securities in line with the recently-approved final plan of reorganization: Not exceeding \$11,195,000 of first mortgage four per cent bonds, series A; \$15,354,500 of general mortgage income bonds; 383,862½ shares of class A stock, par value \$40 a share, and 957,477 shares of no par value common stock.

To carry out the reorganization of the company Division 4 has also approved a Reconstruction Finance Corporation loan to this company in the amount of \$4,933,000. As collateral for the loan the R. F. C. will receive \$12,439,000 of the company's first mortgage four per cent bonds, \$550,000 of Southern Illinois & Missouri Bridge first mortgage four per cent bonds, \$134,600, par value, of Fruit Growers Express Company stock, and the company's distributive share of the capital of the Railroad Credit Corporation.

**CHICAGO & NORTH WESTERN.—Abandonment.**—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a portion of its Vesta branch, extending from Wanda, Minn., to Wabasso, 5.6 miles.

**CHICAGO & NORTH WESTERN.—Abandonment.**—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon portions of lines extending from Strawbridge, Wisc., to valuation station 524 plus 89 in Jo Daviess county, Ill., and from Hazel Green Junction, Ill., to the end of the line at Hazel Green in LaFayette county, Wisc., 4.9 miles in Wisconsin and 0.3 mile in Illinois.

**Abandonment.**—This company has also been authorized by Division 4 to abandon its so-called Fremont cut-off extending from East End, Nebr., to West End., 2.9 miles.

**FLORIDA EAST COAST.—Reorganization Plan.**—Judge L. W. Strum of the federal district court at Jacksonville, Fla., in a two-day hearing opening on October 24 for discussing the reorganization of this road, declared that unless various creditor groups agree on a compromise plan the alternative of litigating their respective rights will be very costly. Said he, "It's your property, your money and your interest and if you want to get into a legal battle impairing the value of your own interests it's your privilege." The Florida East Coast has been in receivership since September 1, 1931.

Presented at the hearing was a plan by a committee representing 49 per cent of first and refunding 5 per cent mortgage bonds and 45 per cent of first 4½s. Filed on September 26, it provides that holders of the \$12,000,000 issue of 4½ per cent first mortgage bonds shall receive an equal principal amount of new first mortgage bonds bearing 3¾ per cent at the start but to increase to 4 per cent in the event that the new company earns income available for fixed charges amounting to \$1,250,000 per annum for two consecutive years. Holders of the present \$45,000,000 first and refunding issue of 5 per cent bonds would receive 4½ per cent income bonds and 450,000 shares of no-par stock on a basis of \$200 in bonds and 10 shares of stock on

each \$1,000 bond. Unsecured creditors and stockholders would not participate in the new company.

**LEHIGH VALLEY.—Voluntary Adjustment Plan.**—The three-judge federal district court at Philadelphia, Pa., which approved this company's plan to adjust interest and maturity payments on securities totaling \$105,836,000 on August 7 (see *Railway Age* of August 10, page 232) has allowed claims amounting to \$135,500 to five law firms and two banking institutions for services rendered in consummating the plan. The awards represented a cut of \$46,682 from a total of \$182,182 which was sought by eight law firms, two banks, a railroad economist and a woman bondholder who acted as her own counsel. In so reducing claims the court cut all but one claim and threw out four in their entirety. By such reductions the court cut the road's expense bill from an estimated \$275,000 to about \$231,000. The railroad has already paid \$166,377.

**MISSOURI PACIFIC.—Abandonment.**—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon the following portions of its Granby branch, (1) extending from Atlas, Mo., to the end of the track at Granby, 14.7 miles, and (2) extending from Duenweg Junction, Mo., to the end of the track at Duenweg, one mile.

**MISSOURI PACIFIC.—Control of the Union Terminal and the St. Joseph Belt.**—This company has been authorized by Division 4 of the Interstate Commerce Commission to acquire control of the Union Terminal and the St. Joseph Belt in St. Joseph, Mo., through ownership of their capital stock, which will be acquired from Terminal Shares, a wholly-owned subsidiary of the Alleghany Corporation.

**NEW YORK, NEW HAVEN & HARTFORD.—Abandonment.**—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a line extending from Berlin station, Conn., to East Berlin station, 3.6 miles.

**NORTHERN PACIFIC.—Abandonment.**—This company has asked authority from the Interstate Commerce Commission to abandon a branch line extending from Wabash, Wash., to the end of the line at Mendota, 1.4 miles.

**PENNSYLVANIA-NEW YORK, NEW HAVEN & HARTFORD.—Bonds of the New York Connecting.**—The New York Connecting has been authorized by Division 4 of the Interstate Commerce Commission to issue and sell \$27,333,000 of first mortgage 3½ per cent bonds, due October 1, 1965.

The net proceeds received from the sale, together with funds provided by the company, will be used for calling in, paying off and redeeming on or before February 1, 1941, the \$27,333,000 of bonds now issued and outstanding under a first mortgage dated May 31, 1913. The bonds have been sold at 100 per cent plus accrued interest to the date of delivery to Kuhn, Loeb & Co. and Morgan Stanley & Co., Inc., of New York.

At the same time the Pennsylvania and

# Caution!

The walls of superheater units are exposed to the intensely hot gases from the firebox. They are kept within safe metal temperatures, however, by the transfer of the heat of the gases to the steam as it flows through the units at high velocities. Any appreciable *retarding* of the steam flow reduces the rate of heat transfer and naturally builds up an unsafe metal temperature. This will eventually cause superheater unit failures and may result in engine failure.

Superheater units should have smooth surfaces throughout their length. Joints introduce restrictions . . . exterior ridges on superheater units obstruct the drafting of the locomotive, while interior ridges restrict steam flow and increase pressure drop.

When units become unserviceable after years of service, send them to us for REmanufacture. The cost is about half that of new units and they are returned to you like new. They are processed by the same men and machinery as are used in making new units . . . they are re-forged with smooth tubular surfaces, free from joints and attendant restrictions.

An interesting booklet describes the Elesco unit REmanufacturing service . . . write for a copy today.



SUPERHEATERS • FEEDWATER HEATERS  
AMERICAN THROTTLES • STEAM DRYERS  
EXHAUST STEAM INJECTORS • PYROMETERS

THE  
**SUPERHEATER**  
C O M P A N Y

Representative of  
AMERICAN THROTTLE COMPANY, INC.  
60 East 42nd Street, NEW YORK  
122 S. Michigan Ave. CHICAGO  
• • •  
Montreal, Canada  
THE SUPERHEATER COMPANY, LTD.



the New York, New Haven & Hartford, who control the road through 100 per cents stock ownership, have been authorized by Division 4 to guarantee the principal and interest of the bonds and the sinking fund payments.

**PERE MARQUETTE.**—*Equipment Trust Certificates.*—This company has asked the Interstate Commerce Commission for authority to assume liability for \$2,200,000 of two per cent serial equipment trust certificates, maturing in 10 equal annual installments on November 15 of each of the years from 1941 to 1950, inclusive. The proceeds will constitute 90 per cent of the purchase price of equipment costing a total of \$2,487,447 and consisting of 500 50-ton all-steel box cars; 50 50-ton all-steel automobile-furniture box cars; 50 50-ton all-steel automobile box cars specially equipped for automobile parts loading; and 200 70-ton all-steel, low-side, drop-end gondola cars.

**READING.**—*Extension of Maturity of Bonds of the Port Reading.*—The Port Reading has asked the Interstate Commerce Commission for authority to extend the maturity date of \$1,500,000 of first mortgage five per cent bonds from January 1, 1941, to January 1, 1956, and to reduce the interest rate to 3½ per cent during the extended period. At the same time the Reading asked authority to guarantee, by endorsement, the payment of the principal and interest of the bonds.

**SOUTHERN.**—*Equipment Trust Certificates.*—This company has been authorized to assume liability for \$7,300,000 of its 1½ per cent serial equipment trust certificates, maturing in 10 equal annual installments of \$730,000 on November 1 in each of the years from 1941 to 1950, inclusive. The issue has been sold at 100.568 to Drexel & Co. and Laurence M. Marks & Co., making the average annual cost to the company approximately 1.77 per cent.

**TENNESSEE CENTRAL.**—*Extension of R. F. C. Loan.*—Division 4 of the Interstate Commerce Commission has approved an extension of the time of payment for a period ending not later than April 1, 1950, of \$4,984,000 of the loan by the Reconstruction Finance Corporation to this company, maturing August 1, 1940, in the amount of \$4,992,906.

**WASHINGTON, BRANDYWINE & POINT LOOKOUT.**—*Abandonment.*—This company has been authorized by Division 4 of the Interstate Commerce Commission to abandon a portion of its line extending from Mechanicsville, Md., to the end of the line at Forest Hall, 2.3 miles.

#### Average Prices of Stocks and Bonds

	Oct. 29	Last week	Last year
Average price of 20 representative railway stocks..	30.05	30.16	34.43
Average price of 20 representative railway bonds..	59.85	60.56	60.48

#### Dividends Declared

Maine Central.—6 Per Cent Prior Preferred, \$8.50, payable November 7 to holders of record November 1.  
Norfolk & Western.—\$2.50, quarterly, payable December 19 to holders of record November 30.

## Railway Officers

### EXECUTIVE

**F. S. Baird**, general coal freight agent of the Norfolk & Western, has been appointed assistant vice-president in charge of traffic, with headquarters as before at Roanoke, Va. Mr. Baird was born at Carbon Hill, Ohio, on January 10, 1890, and was educated in the public schools and in business college of Athens, Ga. Mr. Baird entered the service of the Norfolk & Western on May 1, 1910, as a stenographer in the office of the assistant general freight agent at Columbus, Ohio, and was promoted to clerk in May of the following year. He served in that capacity until



F. S. Baird

March, 1920, when he became chief clerk. In May, 1925, Mr. Baird was appointed coal freight agent, with headquarters at Roanoke. Two years later he was promoted to assistant general freight agent. On May 1, 1939, he was appointed assistant freight traffic manager and four months later became general coal freight agent, the position he held until his recent appointment as assistant vice-president in charge of traffic, effective November 1.

### FINANCIAL, LEGAL AND ACCOUNTING

**J. G. Osborne** has been appointed right of way and tax agent of the Western lines of the Canadian Pacific, with headquarters at Winnipeg, Man., succeeding **Peter McPherson**, who retired on October 31.

**James H. Patterson**, freight claim agent of the Mobile & Ohio (now part of the Gulf, Mobile & Ohio), with headquarters at Mobile, Ala., retired on October 1. Mr. Patterson was born in Madison County, Ill., on October 21, 1872, and attended business college. He entered railway service on December 3, 1896, as secretary to the general freight agent on the Mobile & Ohio at St. Louis, Mo., and in 1904 he was appointed chief clerk to the general traffic manager at that point. A year later, he was appointed special freight agent at Jackson, Tenn., and in 1911 he was appointed route agent at Mobile. On January 1, 1913, Mr. Patterson was promoted

to freight claim agent, the position he held until his retirement.

### OPERATING

**Howard Jones** has been appointed acting trainmaster on the Missouri Pacific, with headquarters at Nevada, Mo., relieving **W. R. Adkinson**, who has been granted a leave of absence because of illness.

**William S. Dickensheets**, trainmaster on the Atchison, Topeka & Santa Fe at Topeka, Kan., has been transferred to Newton, Kan., succeeding **H. C. Willis**, who has been transferred to Arkansas City, Kan. Mr. Willis relieves **C. F. Krammes**, who has been assigned to other duties.

**W. A. Hahnen**, secretary, auditor and assistant to the general manager of the Des Moines Union Railway, has been appointed acting general manager, with headquarters as before at Des Moines, Iowa, succeeding **Jacob A. Wagner**, whose retirement was announced in the *Railway Age* of October 12.

### TRAFFIC

**J. L. Philips** has been appointed industrial agent of the Atlantic Coast Line, with headquarters at Wilmington, N. C.

**Colonel Lee H. Landis**, manager of the industrial development department of the Minneapolis & St. Louis, with headquarters at Minneapolis, Minn., retired on October 17.

**T. R. Fitzpatrick**, freight traffic manager, and **J. J. Monks**, assistant freight traffic manager, of the Pittsburgh & Lake Erie, have been appointed freight traffic manager and assistant freight traffic manager, respectively, of the New York Central, with headquarters as before at Pittsburgh, Pa.

**John Pullen**, whose appointment as assistant general freight traffic manager of the Canadian National at Montreal, Que., was reported in the *Railway Age* of October 19, was born at Oak Park, Ill., on

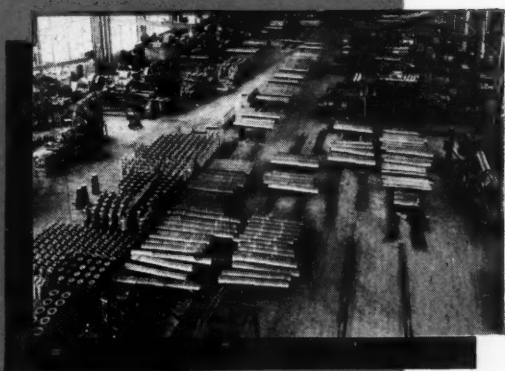
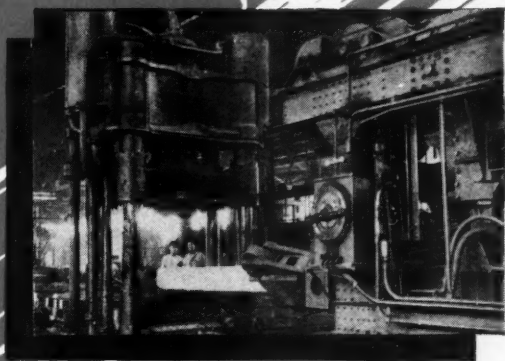


John Pullen

November 6, 1890. Mr. Pullen was graduated from McGill University in 1913. During the summer months of 1911 and 1912 he was employed as a clerk in the first

# ALCO

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**L**ONG runs demanded of modern locomotives require the best forgings that experience and money can buy. "Knowing how" to manufacture such forgings is Alco's specialty. We have the plant and personnel to turn out any job to suit your requirements.

AMERICAN LOCOMOTIVE COMPANY



vice-president's office and also as assistant in the transportation department, entering permanent service with the Grand Trunk on September 18, 1913, as clerk in the tariff bureau at Montreal. On May 1, 1916, he was appointed soliciting freight agent in Montreal, and in August, 1923, became chief clerk to the vice-president in charge of traffic. On January 1, 1927, Mr. Pullen was promoted to assistant to the vice-president in charge of traffic and in September, 1932, was appointed regional general freight agent, Central region, Montreal. In April, 1939, he was appointed freight traffic manager, Central region, at Montreal, the position he held until his recent appointment as assistant general freight traffic manager.

**C. F. Swisher**, division freight agent on the New York Central at Toledo, Ohio, has been promoted to assistant to the freight traffic manager, with the same headquarters, a newly created position, and **E. G. Howard**, general agent at Toledo, has been appointed division freight agent at that point, relieving Mr. Swisher.

**William C. Howe**, whose promotion to assistant traffic manager on the Denver & Rio Grande Western, with headquarters at Salt Lake City, Utah, was announced in the *Railway Age* of October 26, was born at Fairfield, Ill., on February 19, 1876, and entered railway service on August 1, 1897, as a file clerk on the D. & R. G. W., at Salt Lake City, since which time all of his service has been at that point. He was later advanced successively to car clerk, manifest clerk, revising clerk, baggage agent and in 1901 to depot ticket agent. In 1903, Mr. Howe was promoted to assistant city ticket agent and in 1915 to city ticket agent. From 1919 to 1925 he was out of the service because of ill health, but returned to work on the latter date as city freight agent. Mr. Howe was advanced to commercial freight agent in 1933, the position he held until his recent promotion.

## ENGINEERING AND SIGNALING

**A. J. Wilson** has been appointed supervisor of general maintenance of the Union Railroad. **Troy West** has been appointed engineer of track, both with headquarters at East Pittsburgh, Pa.

**J. A. Lorch**, valuation engineer of the Chicago & North Western, has been appointed assistant to the chief engineer, a newly created position, with headquarters as before in Chicago, and will handle valuation map work, special matters for tax cases and other work as may be assigned. The position of valuation engineer has been abolished.

**Newton Wells McCallum**, whose appointment as assistant chief engineer of the Pittsburgh & Lake Erie at Pittsburgh, Pa., was reported in the *Railway Age* of October 19, was born on November 8, 1878, at Renovo, Pa. Mr. McCallum was graduated from Pennsylvania State College in 1899 with a civil engineering degree. He entered railroad service on June 15, 1899, with the New York Central and served until January 1, 1900, as rodman on the Mohawk division. On January 1, 1900, Mr.

McCallum was appointed bridge inspector; on April 1, 1902, assistant supervisor bridges; on April 1, 1904, assistant engineer and on March 1, 1905, supervisor of bridges, all on the Mohawk division of the New York Central. From May 1, 1907, to June 22, 1920, he served as supervisor of structures on the Electric division and from the latter date to September 1, 1923, he was division engineer on the Ontario division, same road. He was division engineer on the Electric division and Grand Central terminal, New York Central, from September 1, 1923, until his recent appointment as assistant chief engineer of the Pittsburgh & Lake Erie, effective October 1.

**Royden R. Brockway**, whose promotion to assistant bridge engineer of the Northern Pacific, with headquarters at St. Paul, Minn., was announced in the *Railway Age* of October 19, was born in Rock County, Minn., on September 17, 1880, and graduated in civil engineering from the University of Minnesota in 1905. He entered railway service on June 17, 1907, as



Royden R. Brockway

a draftsman in the bridge engineer's office at St. Paul and on November 1, 1910, he was appointed bridge inspector at Superior, Mont. On December 21, 1910, he went with the Illinois Central at Chicago, returning to the Northern Pacific on June 26, 1911, as bridge inspector at Glendive, Mont. In November, 1911, Mr. Brockway returned to the bridge engineer's office at St. Paul as a draftsman, and on May 20, 1913, he was promoted to chief draftsman, the position he held until his recent promotion, which was effective October 10.

**R. W. Putnam**, assistant division engineer on the Southern Pacific, with headquarters at Portland, Ore., has been promoted to division engineer of the Rio Grande division, with headquarters at El Paso, Tex., succeeding **F. A. Feikert**, who has been transferred to the Salt Lake division, with headquarters at Ogden, Utah. Mr. Feikert replaces **Otis Weeks**, who retired on November 1.

**W. H. Miesse**, assistant division engineer on the Cleveland, Cincinnati, Chicago & St. Louis (Big Four), with headquarters at Mattoon, Ill., has been promoted to division engineer of the Ohio division, with headquarters at Springfield, Ohio, succeeding **Leigh B. Elliott**, whose

appointment as division engineer on the New York Central, with headquarters at Cleveland, Ohio, was announced in the *Railway Age* of October 26.

## OBITUARY

**Talbot Hunter Williamson**, manager of the Norfolk & Portsmouth Belt Line for the past 20 years, died at his home in Portsmouth, Va., at the age of 53.

**Harry Frazier**, consulting engineer and former chief engineer of the Chesapeake & Ohio, died on October 4 at his home in Lewisburg, W. Va., after an illness of 18 months, at the age of 79. Mr. Frazier retired in 1930.

**Henry B. Seaman**, who was engaged in important bridge and tunnel work for a number of railroads during a long career as a civil engineer, died in New York at the age of 79 on October 24, after an illness of several years duration. He was born in New York and was graduated from Swarthmore College with a civil engineering degree. At the age of 20 he entered the service of the Erie and a year later became resident engineer for the Atlantic City (now P.-R. S. L.). In 1883 he went with the Edge Moor Iron Company, but returned to railroad service in 1886 as an engineer employed in the construction of the Fulton Street elevated line of the Kings County Railway, Brooklyn, N. Y. (which line is scheduled shortly for demolition by the city of New York). After completion of this work in 1887 he worked for a year as chief draftsman in the city engineer's office in Philadelphia, Pa. In 1888 he became principal assistant engineer of Wilson Brothers & Co. of the same city, consulting engineers employed by the Pennsylvania and the Reading.

In 1891 he re-entered the service of the Erie as bridge engineer, holding that post until 1893, when he served as construction engineer for the New York, New Haven & Hartford, in connection with improvements along the main line between Woodlawn, N. Y., and New Haven, Conn. Upon completion of these projects in 1896 he went into private practice, during which time he took up the study of law and was admitted to the New York Bar. From 1900 to 1903 he was engaged in the construction of rapid transit subways in New York, during which period he introduced the pneumatic riveting hammer in that field. In 1903 he returned to the service of the New Haven in connection with the reconstruction of its large bridges located on the Shore Line, which projects lasted until 1905. In 1907 he was appointed chief engineer of the New York State Public Service Commission, serving until 1910, when he returned to private practice. From 1914 to 1916 he was a construction engineer in connection with the Hell Gate bridge of the New York Connecting. During the war he served with the Navy Department. In 1920 he went with Coverdale & Colpitts in connection with railroad and traction properties. From 1924 to 1926 he was chief engineer in connection with the extension of the Steinway rapid transit tunnel, New York. In recent years he served as consultant from time to time for the Works Progress Administration.